

The oriental Readers

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THE
Oriental Readers

BOOK THE SIXTH.

DESCRIPTIVE GEOGRAPHY.

—o—
ASIA.

Plateau, a table-land.	Antiquity, old times.
Resemblance, likeness, to.	Meridian, noon, mid day.
Aquatic, relating to water.	Noxious, hurtful.



In the extent and diversity of its surface, the variety of its productions, and the amount of its population, Asia surpasses all the other continents. It embraces about one-third of the entire land surface of the globe, and is the home of one-half of the human family.

The great mass of Central Asia, comprising nearly four-fifths of the whole continent, consists of vast and elevated plains, intersected and bounded by mountain ranges, some with snowy peaks rising to the height of 28,000 feet. This immense plateau extends thousands of miles, and varies in elevation from 1,000 to 15,000 feet.

From this table-land the country descends by a series of terraces and slopes to the frozen wastes of Siberia in the north, and the fertile plains of China in the east; while south of it the land is broken into the three peninsulas of Arabia, Hindustan, and Further India.

Western Asia bears a general resemblance to the central part, being almost entirely occupied by table-lands, intersected by a net-work of mountains, leaving only a narrow strip of lowland along the coasts.

Most of the rivers which water the great plains of Siberia, China, and Hindustan have their origin in the central table-land. Here rise the Obi, Yenisei, and Lena, which, after a course of nearly 3,000 miles, discharge

their waters into the Arctic Ocean; the Amoor, Hoang-ho, and Yang-tse-Kiang, flowing east into the Pacific; and the Indus, Ganges, and Brahmapootra, which flow into the Indian Ocean.

The contrast between the northern rivers and those of the east and south is very great. The rivers of Siberia roll across desert plains, where eternal winter banishes the arts and social life. A vast mass of water, bordered sometimes by a dark pine forest, sometimes by a dreary marsh; some fishermen's boats floating by the side of innumerable swarms of aquatic birds; or the gentle beaver raising his industrious habitation, without fearing the pursuit of man;—this is all that a Siberian river offers that is very remarkable.

On the other hand, the rivers of China and India flow across plains smiling with plenty and crowded with inhabitants. They form silent highways, along which the teeming millions of these populous countries pass in boats of every description, conveying to the very heart of the continent the goods of distant countries, and returning with the products of regions thousands of miles inland. On their banks stand large villages, towns, and ancient cities, whose origin is lost in antiquity, and whose inhabitants pay divine homage to those sacred streams on which the fertility of their soil, the abundance of their crops, and even their very existence, so entirely depend.

Stretching, as Asia does, from the Equator to the Pole, it necessarily experiences every variety of climate. In the extreme north the winter is long and severe, the rivers being frozen from September to June. In Southern Siberia, and the northern part of the table-land, the winter, though extremely cold, is shorter, and the mean temperature of the year considerably higher. Farther south the climate is greatly modified by the physical conformation of the country; for, while the cold is severe on the elevated plateaus, the terraces and valleys enjoy an agreeable climate.

South of the table-land, there are only two seasons. From April to November, when the sun is in the meridian, the south-eastern countries suffer from floods of rain, and the south-western from intense heat. During the remaining part of the year the sky is cloudless, and the heat is modified by winds blowing from the interior.

The productions of Asia are rich and varied, corresponding to its great diversity of climate and elevation. Southern Asia teems with animal life. The elephant, tiger, and several species of apes and monkeys find shelter in the forests of India and Ceylon; lions and panthers roam over the deserts of Arabia and Persia; while antelopes, jackals, and bears abound on the steppes and plains of Central Asia. The vast forests of Siberia harbour reindeer, elks, bears, ermines, sables, and other fur animals; while the polar bear finds a congenial home among the ice and snow of the arctic shores.

Of domestic animals, the elephant is confined to the south, and the camel to the arid wastes of the centre and west; the horse, ass, buffalo, ox, sheep, and goat, are more widely distributed; the reindeer is found only in the north, where it supplies the inhabitants with food, clothing, various domestic utensils, and the means of locomotion.

Birds of every size, and clothed in the gayest plumage, inhabit tropical Asia; and the northern rivers and seas are visited by millions of water fowl, and teem with fish. The hideous crocodile, the powerful python, the deadly cobra, and other reptiles are almost confined to the south, which is also visited by countless swarms of locusts, mosquitoes, gnats, ants, and other noxious and destructive insects.

From the humble lichens and mosses of the arctic regions to the gigantic palm trees of the tropics, Asia possesses every intermediate form of vegetable life. Many of the European grains, fruit-trees, and beautiful shrubs and flowers, were first brought from Asia. There also are produced tea, coffee, spices, ornamental woods, and

other articles which administer to the necessities or add to the enjoyments of the Western world.

In the extreme north we find nothing but morasses of coarse rushes mixed with diminutive birches and willows; in somewhat milder districts the country is overgrown with immense forests of fir and birch-trees. On the great table-land there are vast treeless plains covered with herbage, which affords pasture to the enormous flocks and herds of the wandering tribes.

But it is in the south and east of Asia that the richness and variety of its vegetation are seen to perfection. There, the forests yield teak, bamboo, palm, ebony, satin-wood, and other valuable trees in the richest profusion; there, the orange, citron, almond, fig, pomegranate, melon, date, and other luscious fruits reach maturity; there, rice, maize, and tobacco are extensively cultivated, as well as the cotton-plant, sugar-cane, and coffee-shrub. Arabia is the land of the date, Persia of delicious fruits and lovely flowers, while the tea-plant flourishes in China, Japan, and Northern India.

The population of Asia is roughly estimated at 600,000,000, or more than one-half of the human family, five-sixths of the whole being found in China and India.

To the student of human nature, Asia presents features of the deepest interest. Thousands of years ago, when Europe was inhabited only by savage tribes, several Asiatic nations had made considerable progress in science and art, and it was from them that civilization was diffused over the rest of the earth.

The level country in the south-east of Turkey in Asia was the seat of the Assyrian and Babylonian Empires, the ruins of whose capitals—Nineveh and Babylon—may still be seen. It also contains the remains of numerous other famous cities,—Palmyra, the capital of Zenobia; Baalbec, with its magnificent ruins; Tyre and Sidon, the chief ports of ancient times; and Ephesus, whose temple of Diana was considered one of the seven wonders of the world.

SUMMARY.—Asia surpasses the other continents in its extent, diversity of surface, and variety of productions. Central Asia is an elevated plateau intersected by mountain ranges. The plains of Siberia and China, with the peninsulas of Arabia, Hindustan, and Further India, surround this central mass, whence flow the Obi, Yenisei, Lena, Hoang-ho, Yang tse-Kiang, and other great rivers. Asia necessarily possesses every variety of climate, and yields a corresponding variety of animal and vegetable productions. Among its wild animals are the elephant, rhinoceros, antelope, ermine, and reindeer. The hideous crocodile, the powerful python, and the deadly cobra are confined to tropical Asia. Asia also yields trees, fruits, and flowers, in the greatest profusion. The population is estimated at 600,000,000. When Europe was inhabited by savage tribes, China and other Asiatic nations had made considerable progress in science and art.

QUESTIONS.—What is the extent and population of Asia? Name the chief rivers. By what wild animals is it infested? Name the chief productions.



A PARABLE.

A youth caught up an aged pilgrim on the way
Of life, and to him said: "My father, tell me, pray
Where Paradise may be, that I may thither speed"
The old man halted, and thus answered him. "Indeed,
The road I know full well, my son: look on before—
Yonder is Paradise, and yonder is the door."
Thereat, off sped the youth, with bounding steps to fly
Towards the portal.

But loud after him did cry
The old man: "Not so; Paradise must entered be
On crutches, and with gouty feet, as done by me."



A TELESCOPE.

Telescope , instrument for seeing distant objects clearly	Refraction , a bending of light, heat, etc.
Lenses , curved glasses admitting light.	Magnified , made greater.
Crystal , a body of regular shape, generally transparent.	Convenient , handy, suitable.

WHEN our eyes are not strong enough to see things which are a *very* long way off, it is useful to have, as it were, an extra, artificial eye.

The instrument called a telescope is used for the purpose of seeing well an object at a distance. Telescopes are much used by sailors. As a telescope appears to make a distant object look near at hand, it is called by some sailors a "Bring-'em-near." In fact, the word telescope itself means something by which you can "see an object far off."

There are several different kinds of telescope. The simplest is the one used for looking at the heavenly bodies, the sun, stars, etc. It is a very simple instrument. It consists of a tube, or pipe, containing two circular and nearly flat pieces of glass properly arranged.

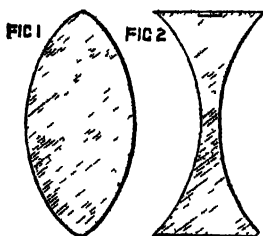
These pieces of glass are the important parts of the telescope. They are called *lenses*. You could not have a common telescope without them, but you might do without the tube. Indeed, some of the first made telescopes had their lenses or glasses fastened on the ends of a long pole, instead of being fixed in a long tube.

You cannot understand how a telescope acts, if you do not clearly understand the use of lenses. I must, therefore, first explain lenses to you.

A lens is a substance with rounded surfaces, through which light passes. Lenses may be of various substances, as glass, crystal, precious stones, etc. Those of glass are always used for telescopes, and hence lenses are often called simply *glasses*.

Lenses may be of various shapes, and hence have differ-

ent names. The two most important lenses are the convex, and the concave.

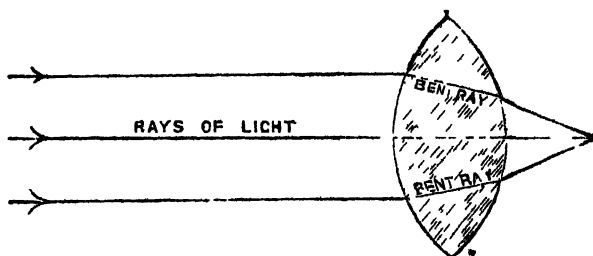


The convex lens has both surfaces bulged outwards, like the outside of a watch glass. (Fig. 1.)

Strictly speaking, it is called double convex. The concave, or properly, the double concave, has both surfaces curved inwards like the inside of a watch glass, or inner part of a basin. (Fig. 2)

There are other lenses having different names according to the arrangement of their surfaces. But I will not trouble you with their hard names.

Now, attention! When light passes through a lens, it is moved out of its course. This you will best understand by looking at this figure:—



You must suppose that the rays of light are passing through that convex glass, from left hand to right hand, as you look at the figure. When they enter the lens, they are bent towards its middle, and the same takes place when they leave it. So by these two bends they very quickly meet in a point outside the lens.

Just the reverse happens with a concave glass. In this case, also, it is true that the light rays are bent both

in going in and coming out of the lens. But then that bending is away from the centre, so that the rays of light are scattered further away from each other. Of course they do not meet in a point at all.

This bending or breaking of the rays of light is called *re-fraction*. Every substance through which light passes, bends it more or less. Water will do this, and even air, thin as it is.

Now, perhaps, you can easily understand how the telescope acts in making bodies plainer to the eye.

The two glasses of a simple telescope are generally both double convex. They are placed at a certain convenient distance from each other.



The lens nearest the thing you look at, and of course farthest from your eye, is called the *object-glass*. The lens nearest your eye is named the *eye-glass*.

The rays of light from the object you are viewing fall on the object-glass. They are bent twice in passing through this lens. You expect this. After leaving the lens they form an exact picture of the object somewhere in front of the eye-glass. Perhaps you did not expect this. This exact picture of the object is called its *image*. It is the *likeness* of the object.

You look at this image with the eye-glass of the telescope. The rays of light from this image pass through the eye-glass, and are again twice bent before they enter the eye. Owing to this bending, the eye fancies they have come from a larger body. Thus the original object appears to the eye to be larger, that is, it is *magnified*.

It is usual to draw lines with the figures, showing how the rays of light are bent, and how they cross each other. But I have left these out, in order not to confuse you.

To sum up, the action of the telescope consists of two parts. Firstly, the object-glass forms an image; secondly, this image is magnified by the eye-glass.

The telescope just spoken of is used almost entirely for looking at the heavenly bodies. Its image is always upside down. This makes no difference with heavenly bodies, but does not quite suit earthly objects.

To correct this topsy-turvy effect, two other lenses are put into the telescopes used for looking at earthly things. These extra lenses set them in the proper position again. Men seem no longer walking on their heads, but in their usual manner.

The tubes of a telescope are made to slide in one another so as to suit different sights and different distances of objects. The telescope also becomes more portable.

The long telescope, so much valued by every sailor who could afford to have one, is rather going out of fashion now. A more convenient one, which is far shorter, and is looked through with both eyes, is oftener used. It is called the *binocular*, or two-eyed telescope, and is neater and less fatiguing than the one-eyed one.

Some of the early telescopes were over 100 feet in length. There is now no occasion to make them so long.

Many very large telescopes have a polished plate of metal, instead of a lens, to form the image. The image is then magnified as usual.

It seems doubtful who invented the telescope. Some say it was Roger Bacon, an Englishman, others, Galileo, an Italian; others, Jansen, a Dutchman, and so on.

SUMMARY—A telescope is an instrument for seeing plainly distant objects. The simple telescope consists of tubes with two glasses, generally both convex. A lens is any substance with curved surfaces, suitable for the purpose. A double convex lens has both faces curved outwards. A double concave lens has both faces curved inwards. Rays of light in passing through a convex lens are bent in and meet in a point. In passing through a concave lens they are bent the opposite way. Refraction is the bending or breaking back of light rays. A simple telescope has two lenses—an object lens, or glass, and an eye-glass. The object

lens forms the image; the eye lens then magnifies this image. In this telescope the image is upside-down. Other lenses are required to put it right. The tubes of a telescope slide in and out to suit different distances and different sights. Some telescopes have polished plates instead of object glasses.

QUESTIONS.—What is a telescope? Describe a simple telescope. What is a lens? Describe how a lens acts on light. What is the difference between convex and concave glasses? What is refraction? What are the uses of the object-glass and of the eye-glass in a telescope? How is the image put right? What may be used instead of an object-glass?

INDIA.

Magnified, increased in size.	Ablutions, washings, cleansings.
Ravine, narrow valley.	Bazars, markets.
Umbrageous, shady.	Salaaming, saluting.

In the north of India is a range of mountains, called by the people who live below, the *Abode of Cold*, or of *Snow*—Himalaya. Let us mount one of its highest peaks and use this stand-point for the survey of our dominions.

Turning, first, to the right, we see (with eyesight, however, many times magnified), nothing but high table-land stretching westward, and fringed with the far distant peaks of Afghanistan. Looking nearer, we see five rivers gushing from the ravines of the mountain range. Having flowed from sacred lakes in Thibet, these streams are holy, and the territory they enclose is rich and populous in comparison with that beyond.

East of the five rivers, the elevated land which forms the Himalaya slope becomes lovely. Averaging four or five thousand feet in height, it presents now forests of the stern woodland character of the north; now vast expanses of grass and wild flowers; and then dark ravines, leading down to sunny platforms. Clouds are floating below, stratum beneath stratum, and stray vapours dim the sun; yet even here monkeys abound in the woods, and butterflies, measuring nine inches across the wings, alight on the flowers in the pastures.

Immediately below is a belt of jungle, fringing the slope where it meets the plain; and, stretching forward from it, a region of tropical growths, caused and preserved by the umbrageous character of the woodland. Prodigious trees are bound together by creepers, which shake out their blossoms a hundred feet from the ground. The grass is so tall that the elephants are heard and discovered by their tread before they are seen. In the beds of shrunken streams, oleanders blossom; and the apricot and pomegranate ripen in the sunny spaces. This is still high ground in comparison with that which lies near the sea; and none in India is more sacred in the eyes of its inhabitants.

The land, as it slopes northwards from the Jumna, is strewn with temples, and traversed by groups of pilgrims coming up to worship. From the sandy western plains to the watery eastern region of Bengal, stretches this rich plateau, through which run the great rivers of Upper India, and where the populous cities on their banks tell of the glories of Hindus and Mahommedans alike.

From our elevation we look down, and observe what millions of natives are doing. In the well-drained fields of this upper surface the husbandmen are sowing their grain, or leading water from the tanks among the dry ridges. Within the woods the herdsmen are burning the jungle grass to get a fresh growth for their animals; and the hunters are distributed in a circle to take account of the wild beasts which will be thus dislodged.

The sacred Ganges is all alive with boats, and along its margin are companies of the devout at their ablutions, with here and there an aged or sick sufferer awaiting the hand of death. In the towns the people are—like townsmen everywhere—bargaining in the bazárs, salaaming in the temples, prostrating themselves in the palaces; while, in the domestic court-yards, the women are grinding corn in the handmill, and neighbours are sitting in a circle at evening to listen to interminable tales.

What lies below and to the east of this plateau? The

basin of the Ganges, a watery realm, where, in seasons of floods, the villages appear like islands amidst the waste of waters, while the forests sway to and fro under the gush of the currents and eddies. In the dry season, when the waters are lowest, the people resort to the shade of these forests; the wild beasts again slink into the covert from the hills; the rice fields grow green, and the pestilence drives the rural population to the towns, or to a boat life on the great rivers.

Thus have we overlooked Hindustan Proper, or the Bengal Presidency, as we now call it, namely, the area extending from the Himalaya to the Vindhya mountains in one direction, and from the Brahmmapootra to the Indus in the other. If ever realm was dignified by its boundaries, it is this. Nature's mightiest barriers hem it in—northward, mountains never yet scaled; round the shores, an ocean never yet fathomed; and these mountain and ocean barriers connected by rivers of a magnitude kindred to both.

Looking southward, the Vindhya mountains arrest our attention. This barrier stretches nearly from sea to sea.

Surmounting the range, what do we find next? A rich, narrow, valley, in which the Nerbudda flows from west to east. Then comes another and a lower range; again another great river, the Tapti, which flows westwards. From the deep valleys of these rivers the land rises, terrace above terrace, till, at 1000 miles from the Nerbudda, the plateau is 3000 feet above the sea. It is not horizontal, for it slopes down from west to east; nor is it altogether level, for its plains show some shallow undulations, and round the outer edge little hills are grouped and scattered, their recesses filled with forest. Otherwise, upon that whole staircase of terraces, open and treeless, is beheld a vast expanse of grass and crops after the rains, and of brown burnt surface in spring, with towns scattered here and there, and thousands of villages;

and, near the sources of the rivers, we descry Hindu temples, to which trains of pilgrims are converging from all quarters. As the rivers run in deep channels, the people are busy about their tanks and the channels which lead their waters over the fields of the district.

Lying before us in the glare of a tropical sun, this plateau darkens with vegetation towards its furthest extremity. The high corner of the south-west is darkest, for there the clouds gather first above the heights; and under those clouds the forests are grandest. Narrowing as it rises towards the south, the platform is rounded off before it reaches the sea. A chasm of lower land lies beyond; and further on, more hills, extending into the sea in the form of the promontory of Comorin, from which we espy the lovely island of Ceylon.

But we have not seen quite all. What is below the plateau—between it and the sea? On the western side, a strip of land, hot and moist, from 30 to 60 miles broad, easily reached from the sea, but not from the plateau above. The great embankment, which supports the table-land of the Deccan, is a mere rim inside, but a precipice of two or three thousand feet deep on the seaward side. There are few roads down these Gháts; and, till the English showed the way, it was scarcely possible for the people on the shore to obtain the produce of the Deccan. The steep walls bristle with forests,—bamboos wave in the breeze. The sandy beach of that Malabar coast is covered with cocoa palms, forming a fringe for the margin of the tide. On a rocky island of small extent stands Bombay, valuable for its harbour on that exposed coast. The Coromandel coast on the east is even more perilous.

India is a country studded with objects of interest to all—in fact, there is scarcely any branch of natural

science, or ornamental art, which does not find illustration in some part or other of India.

There the traveller in his course through the lonely desert, or the pathless forest, may find remains of enormous cities overlaid with sand, or buried in impenetrable jungle; ruins, monuments, mausoleums, and temples of most elaborate workmanship and massive structure, whose history is lost in the vista of the past. There are large tracts of country, now overrun with forest and tenanted by wild beasts, which yet bear traces of having been in former years the seats of civilization and agricultural prosperity.

It is a land where Nature has lavished her richest and most gorgeous gifts; where everything that comes from the Creator's hand is on a magnificent and exaggerated scale. Its ranges of lofty mountains, whose peaks, covered with eternal snow, stretch away to the height of 30,000 feet into the sky, appear to belong to some outskirt of the world; and, when the rays of the setting and the rising sun light them up like large masses of burnished gold rising above a sea of cloud, they form one of the most stupendous and magnificent scenes it is possible to conceive—a scene to which neither the brush of the painter, nor the imagination of the poet, can do adequate justice. There, the earth, under the influence of the tropical sun, in parts tempered by the cool breezes of the snow-clad mountains, teems with the richest productions of the vegetable kingdom; the virgin forests and the pathless hills are peopled by the fancies of an imaginative people with fairies and genii;—it is the very birthplace and nursery of chivalry and romance. There is no country in the world whose ancient annals are more rich in incidents of interest to the student or the poet.

Turning to more practical considerations, India is a country whose resources are almost limitless and inexhaustible. Gold fields unquestionably exist in the more northern regions, as the rivers which flow from the

mountain tracts on the north-eastern boundary of British India carry down gold dust in their sand, particularly the Indus. There, working with the rudest possible machinery, many of the natives easily earn a subsistence by washing out the gold. India has been the great *dépôt* for jewels and precious stones ever since the earliest periods of history.

But richer and more valuable, because more durable than gold fields or diamond mines, are the commercial resources of the country. For all who know India acknowledge that there is scarcely a single branch of industry or commercial enterprise, which, if there pursued with the necessary application of capital and intelligence, will not yield a certain and a rapid fortune.

SUMMARY.—India is the chief of the British Possessions, and is remarkable for the grandeur of its mountain ranges, its famous rivers, far-stretching plains, inexhaustible forests, and the endless variety of its animal, vegetable, and mineral productions. Let us survey this vast dominion from the Himalaya mountains in the north. Below us lies the basin of the Indus and its tributaries; and away to the left the valley of the Ganges, with its millions of dusky inhabitants, bargaining in the bazars, salaaming in the temples, prostrating themselves in the palaces, hunting in the forest, or quietly pursuing their daily avocations. Further south, the eye rests on the table-land of the Deccan, from which a series of terraces descend to the sea. Beyond the mainland, we catch a glimpse of the lovely island of Ceylon.

QUESTIONS.—What does the word Himalaya mean? What do we see on the Himalaya slope? Describe the jungle. Describe the basin of the Ganges. How are the people occupied there? What are the boundaries of the Bengal Presidency? Describe the valleys of the Nerbudda and the Tapti. What is the Malabar coast? What corresponds to it on the east? Mention some of the objects of interest to be met with in India. Why is India of such value to Great Britain?



HIMĀLĀYA:* THE ABODE OF SNOW.

Know'st thou the land where towering cedars rise
 In graceful majesty to cloudless skies ;
 Where keenest winds from icy summits blow
 Across the deserts of eternal snow ?
 Know'st thou it not ?

Oh there ! oh there !

My wearied spirit, let us flee from care !

Know'st thou the tent, its cone of snowy drill,
 Pitch'd on the greensward by the snow-fed rill,
 Where whiter peaks than marble rise around,
 And icy ploughshares pierce the flower-clad ground ?
 Know'st thou it well ?

Oh there ! oh there !

Where pipes the marmot—fiercely growls the bear !

Know'st thou the cliffs above the gorges dread,
 Where the great yaks with trembling footsteps tread,
 Beneath the Alp where frolic ibex play,
 While snow-fields sweep across the perilous way ?
 Know'st thou it thus ?

Go there ! go there !

Scale cliffs, and granite avalanches† dare !

* Sans., Hīm = snow } cold
 Aliya = abode } dwelling.
 † Avalanches (Fr.) = Snowslips.

Know'st thou the land where man scarce knows decay,
 So nigh the realms of everlasting day;
 Where gleam the splendours of unsullied truth,
 Where Dúrga* smiles, and blooms eternal youth?
 Know'st thou it now?

Oh there! oh there!

To breathe the sweetness of that heavenly air!†

SOUND.

Irregular, not in order.
 Pendulum, a swinging body.
 Vibration, a backward and
 forward motion.

Gnats, small insects.
 Conductor, a leader, a carrier.
 Temperature, state of heat
 or cold.

Sound is caused by certain motions given to the air. These motions throw the air into waves, somewhat like those formed when you throw a stone into water. These waves of sound strike against the skin which is stretched like the head of a drum, inside the ear.

Finally, the effects upon the drum of our ears are sent on, or telegraphed to the brain. It is the brain that receives impressions of the different sounds, as it also does of different colours, and of different lights.

A sound may be either *noise* or *music*. It is true that some persons cannot tell the one from the other. But a *noise* is produced by an irregular number of waves of sound. They follow each other in disorder. A noise

* Dúrga = Parvati, Hind-goddess.

† "The Abode of Snow," by Andrew Wilson.

may also be owing to the suddenness and shortness of a sound, as the report of a cannon.

Music, on the other hand, is caused by the regular and steady movement of the sound waves. This regularity of movement causes us to feel pleasure in music. There must, too, be a certain number of movements in a certain time.

You have seen the pendulum of a clock moving to and fro. This backward and forward movement is called a *vibration*. This is a word so much used in speaking of sound, that you cannot have a true knowledge of the subject without knowing its meaning. The movement of a wave of air backward and forward is a vibration. Imagine a piston pushed into and drawn out of a tube, which is closed at its further end. The air in the tube is first pressed together, and then allowed to spread out. This gives you an idea of an air-wave, or vibration.

Could you hear one vibration in a second? Yes; but not as a musical sound—only as a noise. At least sixteen vibrations must be made in a second, before the most acute ear could say it heard a note, a very *low* note indeed. The more vibrations there are in the same time, the higher is the note produced.

The note made by 48,000 vibrations in a second, the highest yet heard, is, as you may suppose, an extremely sharp one. Boys and girls in singing make more vibrations than men, because their notes are higher.

The *pitch* of a note means whether it is high or low, that is, whether it is made by a larger or smaller number of vibrations.

Some sounds are much louder than others. This is owing to the *size* of the vibration; the larger the waves, the louder the sound.

In the common tuning-fork, often used for starting the singing, you can easily see the vibration of the prongs of the fork after it has been struck. Put the vibrating end to the tip of your nose or tongue, and you will *feel* the vibration.

Flies, gnats, and other interesting insects make a well-known humming sound. Sometimes this sound is rather shrill. The sound given out by these insects is owing to their flapping their wings backwards and forwards very quickly. A gnat flaps its wings 15,000 times in a second to produce its delightful note.

Perhaps you may be hardly inclined to believe this. You may think it is impossible to count 15,000 movements of a wing in one second. Nevertheless it is true, for there are many indirect ways of counting large numbers.

Here is the explanation of one method. A toothed wheel is made to strike against a thin card, or plate of metal. Every tooth of the wheel on striking the card causes it to perform one vibration. When the wheel turns round once, as many vibrations will have been made as there are teeth in the wheel. Now the wheel can be turned round any convenient number of times in a second, by connecting it with other wheels.

The number of turns also can be marked by machinery. Knowing the number of turns, and the number of teeth in the wheel, we can easily find out the number of vibrations.

By working the machine properly, almost any note can be produced, from the deepest howl, to the highest scream. To measure the gnat's musical performance, the wheel is turned till its note is exactly the same as the gnat's tone. The same sound being produced, the gnat's wings are presumed to make as many vibrations as the card struck by the wheel.

One proof that insects generally produce sound by movements of the wings, is the fact that when they alight the noise stops.

Generally it is the air which carries sound. Most substances, however, convey sounds more or less. Wood is a capital sound conductor; so is water. Other gases besides air carry sound, but some not so well. In hydrogen gas the sound is very feeble, so that a man's rough

voice sounds like a child's squeaking one. In the heavy carbonic acid gas, sound is heavy and dull.

But there must be a *something* to convey sound. If you take away air and everything else, no sound would be heard. Bells rung in a vacuum, or place devoid of air, cannot be heard. As air is let in, the sound increases.

Bells rung under water, sound very loud to an ear in the water. The scratching of a pin at one end of a log can be heard at the other.

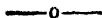
Sound travels very quickly, but still it does take a certain amount of time. Sound travels at the rate of 1,125 feet in a second, at the ordinary temperature of the air. The warmer the air, the quicker the sound. At the freezing point therefore sound travels much less quickly. You might remember 1,100 feet as about the rate that sound travels in a second of time. Hence a sound proceeding from a place a mile off takes nearly five seconds to reach us.

Now light takes a certain time to travel, but it is immensely more rapid than sound. Hence although we may say that lightning and thunder start together, we see the lightning's flash before hearing the thunder's clap. You could roughly tell how far off the lightning was by reckoning 1,100 feet for every second between the flash and the report,

.An echo you know is a sound repeated as if some one were imitating you at a distance. An echo is caused by a sound striking against a large surface, and being thrown back again. If a large brick wall is situated about 1000 feet from where a sound arises, it may give rise to an echo. But there may be buildings round about, which will cause confusion. There are, indeed, so many circumstances to prevent this reflection of sound, that true echoes are great rarities.

SUMMARY.—Sound is occasioned by the vibrations of bodies. These vibrations throw the air into waves. The sound-waves act on the drum of the ear. A noise is caused by a few or an irregular number of vibrations. A musical note is produced by a sufficient number of vibrations regularly repeated. A vibration is a to-and-fro movement. The lowest note is produced by about sixteen vibrations in a second; the highest note, some say, by about 48,000 vibrations in a second. The pitch of a note is its height or depth; it depends on the *number* of the vibrations. The size of a vibration gives loudness or softness. Some insects produce sound by vibrating their wings. Vibrations may be counted by the toothed wheel. Nearly all substances convey sound more or less. Sound travels at the rate of about 1100 feet in a second. An echo is a sound thrown back again.

QUESTIONS.—How is sound caused? What is the difference between noise and music? What is a vibration? What number of vibrations produce the highest and lowest notes? Upon what does the pitch and loudness of a sound depend? How are the vibrations counted? How is sound carried about? What is the rate at which sound travels? Explain an echo.



CHINA.

Redundant, over-abundant.	Portable, that can be carried.
Viceroy, one who acts for a king.	Retinue, attendants, followers.
Elliptical, oval.	Insignia, signs of office.

China Proper consists of three distinct physical divisions, the *Mountain Country*, the *Hill Country*, and the *Great Plain*.

The *Mountain Country* comprises the entire inland half of the empire, and has for its western boundary the sterile table-lands of Thibet, and the sand wastes of Mongolia. Long ranges of mountains running in parallel lines are the chief physical characteristic of this district. The inhabitants, who are comparatively few, are poor, and subject to much privation and want.

The *Hill Country* lies to the south of the Yang-tse-kiang, and is the native region of the tea plant, which

covers the hill slopes. The valleys and river banks yield large crops of rice, while the borders of the canals and inland streams are lined with mulberry trees in the silk district, or with fruit trees in the provinces near the tropics.

The *Great Plain*, situated in the north-east of China, and which is equal in area to France, is more productive, and more densely inhabited, than any other equally extensive portion of the globe. The grand characteristic feature of this region is everywhere the same—a redundant population.

A constant succession of great villages, towns, and cities, with high walls, lofty gates, and more lofty pagodas; large navigable rivers, communicating by artificial canals, both crowded with barges for passengers, or barques for goods, present to the traveller an animated picture of activity, industry, and commerce. At the same time, the strangeness and novelty of everything around will amply suffice to occupy the attention and thought of the stranger on his first visit to this interesting country, and almost induce him to fancy himself transported to another world.

He will behold, on the lakes and morasses, every little islet crowded with villages and mud hovels, the latter being of the same shape and on the same plan as the palace of the viceroy. He will see cormorants catching fish, and men in the water, with jars on their heads, fishing for birds. He will see shoals of ducks, issuing from floating habitations, obedient to the sound of a whistle; carts on the land driven by the wind; and barges on the water, moving by wheels. The bridges on the canals, of every variety of shape—circular, elliptical, horse-shoe, gothic—slight and unstable as they are, must also attract his notice.

Everywhere he will meet with large masses of people; the men, with long gowns and petticoats, having the appearance of women; while the softer sex, with their short jackets, and trowsers, might pass for men, if their

braided hair, stuck full of flowers, and their cramped and bandaged feet, did not betray their sex.

If, by chance, our imaginary traveller should venture to enter within the gates of a Chinese city, such as Pekin, or Nankin, he may fancy himself, from the low chimneyless houses, with carved overhanging roofs, the pillars, poles, flags, and streamers, in the midst of a large encampment. The glitter caused by the gilding, the varnishing, and the painting in vivid colours, that beautify the shop fronts; the gaudy lanterns of horn, muslin, silk, or paper; the busy multitude, all in motion, and all of one sex; the confused noise of tinkers, cobblers, and blacksmiths, in their little portable workshops; the buying, selling, bartering, and bawling of the bazaars; the processions of men carrying home their new-married wives, with a long train of presents, and squalling, noisy music, or carrying to the grave some deceased relative with most lamentable howling; the mirth and bursts of laughter occasioned by strolling jugglers, conjurors, mountebanks, quack-doctors, musicians and comedians, the magistrates in official robes, and attended by a numerous retinue, bearing flags, umbrellas, painted lanterns, and other insignia of their rank and office; these, and a thousand other strange sights and sounds, present to the eye and ear a novel and interesting spectacle.

The noise and bustle of this busy multitude commence with daylight, and cease only at sunset, after which, scarcely a whisper is heard, and the streets are entirely deserted.

The industry of the Chinese in every thing which relates to the comforts and conveniences of life is wonderful. They have, from time immemorial, been acquainted with the manufacture of silk; the manufacture of porcelain has been carried to a high degree of perfection; and their cotton cloths are famous all over the world. Their furniture, their vessels, instruments, and implements of every kind, are remarkable for great solidity,

combined with simplicity of construction. They excel in embroidery, dyeing, varnishing, and cutting ivory. Their fans are everywhere admired, their artificial flowers have never been surpassed, and we owe to them the invention of tinted paper. They have been acquainted for ages with the mariner's compass, gunpowder, and the art of printing.

Nearly the whole arable land is employed in producing human food. Even the steepest mountains are brought into cultivation, and water is conveyed with infinite labour to the summits of the highest hills. The women rear silk-worms, spin cotton, and weave it into cloth, which is in general use among the common people of both sexes; they also manufacture woollen stuffs.

The Chinese use no butter nor cheese, and very little milk; their principal animal food is pork. They have few horses for travelling, show, or war; the only cattle they keep being such as are required in husbandry. Even sheep are rarely seen except in mountain districts where the plough or the spade cannot be used to advantage. Hence there are no grazing farms, and, in fact, very little pasture; every acre of ground capable of cultivation being converted into a rice or a corn-field. Notwithstanding this high state of cultivation the country presents a naked appearance to the eye of an European, there being no hedgerows, and only here and there, at wide intervals, a clump of trees.

The Chinese have no Sunday, and no division of time into weeks. They labour every day in the year except the first, which they devote to family visiting, and the last, which they consecrate to the memory of their ancestors. They celebrate the festival of the full moon by keeping up noise and riot all night; and for two days after the first full moon of the year they celebrate the feast of lanterns: then every house in the city, town, or village, with all the shipping on the canals and rivers is illuminated with an endless variety of gaily painted lanterns of every conceivable size and shape.

Many of the Chinese habits and customs are very strange to us. For example, they shave the whole head, except the crown, from which a long cue hangs down the back; rich men allow the nails of the left hand to grow to a great length; the feet of girls are bandaged from their birth, small feet being considered a mark of beauty.

Millions of the people have no residence on land, but live entirely on the water in boats or wooden houses, where they subsist by fishing, catching wild-fowl, rearing water birds, or by growing the water lily for the sake of its seeds and roots.

Buddhism is the prevailing religion, but the number of gods is incalculable. There are gods celestial, terrestrial, and subterranean; gods of the hills, valleys, and woods; of districts, families, shops, and kitchens; gods who preside over thunder, fire, rain, grain, births and deaths; and genii of the mountains, rivers, lakes, seas, birds, beasts, and fishes.

In the Chinese language each syllable forms a word, and in writing they have a distinct character for every word; there are about 40,000 of these characters, though not more than 3,000 are commonly used. The *written* language is the same throughout the empire; the *spoken* tongue varies in different provinces.

SUMMARY.—China Proper includes the Mountainous Country, the Hill Country, and the Great Plain. The last, which is as large as France, is densely populated and highly cultivated. It is full of villages, towns, and cities, with navigable rivers and numerous canals, and presents an animated picture of activity, industry, and commerce. A Chinese city resembles, in many respects, a huge encampment, where, from sunrise to sunset, all is bustle, noise and confusion. The industry of the Chinese is something wonderful; they have no Sunday, but work on from day to day with only an occasional holiday. Every square foot of available land is cultivated, often with infinite labour. Their skill in the manufacture of silk, porcelain, cotton, and other goods was for ages unequalled; and by patient endurance they still outstrip European intelligence in many industrial pursuits.

QUESTIONS.—Where is China? Describe its area and general features. What are the peculiarities of a Chinese city? In what industrial arts are they distinguished? What is the character and religion of the people?



LOVE THY NEIGHBOUR.



ABOU Ben Adhem (may his tribe increase !)
Awoke one night from a deep dream of peace,
And saw within the moonlight in his room,
Making it rich and like a lily bloom,
An angel writing in a book of gold :—
Exceeding peace had made Ben Adhem bold,
And, to the Presence in the room he said,
“ What writest thou ? ” The vision raised its head,
And, with a look full of all sweet accord,
Answered, “ The names of those who love the Lord.”
“ And is mine one ? ” said Abou. “ Nay, not so,”
Replied the Angel. Abou spoke more low,
But cheerily still ; and said, “ I pray thee, then,
Write me as one that loves his fellow men.”

The Angel wrote and vanished. The next night,
It came again with a great wakening light,
And showed the names whom love of God had blest,
And lo ! Ben Adhem's name led all the rest.



MONGOLIA.

Fissure [L., *fissura*, from *findo* (*fissus*), I cleave], *n.*, a cleft or chasm.

Encumber [Fr., *encombrer*, to obstruct], *v. t.*, to impede the motion of; embarrass, hinder; to load, clog, or overload.

Deplore [L., *deploro*, to weep bitterly, bewail, lament—*de*, intensive, and *ploro*, I wail, lament, weep aloud], *v. t.*, to weep or bewail bitterly; to feel or express grief for; lament.

Fanaticism [L., *fanaticus*, lit., pertaining to a *fane* or temple, inspired, enthusiastic—*fanum*, a place consecrated to a deity, a sanctuary, a temple—*fari*, to speak], *n.*, wild and excessive religious enthusiasm.

Sedentary [L., *sedentarius*, pertaining to sitting—*sedeo*, I sit], *adj.*, sitting much; passed chiefly in sitting; requiring much sitting; inactive.

The general aspect of Mongolia is wild and gloomy; never is the eye relieved by the charm and variety of a landscape. The monotony of the steppes is broken only by ravines, great fissures, and stony sterile hills. Towards the north, in the country of the Khalkas, nature appears more animated; the summits of the mountains are crowned by forests, and the rich pasturage of the plain is watered by numerous rivers; but during the long season of winter the earth is buried under a thick covering of snow. From the side of the Great Wall, Chinese industry glides like a serpent into the desert. Towns begin to rise on all sides; the "Land of Grass" is being gradually covered by crops, and the Mongol shepherds are by degrees driven back to the north by the encroachments of agriculture.

The sandy plains occupy perhaps the greater part of Mongolia: and in these not a tree is to be seen; short, brittle grass makes its way with difficulty through the barren soil, and creeping thorns, and some scanty tufts of heath, form the only vegetation, the sole pasturage, of Gobi. Water is extremely scarce, being only found in

deep wells dug for the use of the travellers who are obliged to cross this miserable region.

There are but two seasons in Mongolia, nine months winter, and three summer. The heat is sometimes stifling, but it lasts a very short time; the nights are almost always cold. In the Mongol countries cultivated by the Chinese, all agricultural labours must be got through within three months. As soon as the ground is sufficiently thawed, it is ploughed or rather scratched on the surface, and the seed thrown in; the crops grow with astonishing rapidity: while waiting for their maturity, the husbandmen are incessantly occupied in clearing away the profusion of weeds that encumber the ground. Scarcely is the harvest gathered than the winter sets in with terrible severity. This is the threshing season: as the cold makes huge cracks in the earth, water is thrown over the threshing floor; it freezes immediately, and affords the labourers a smooth and perfectly clean surface for their operations.

The excessive cold in Mongolia is attributed to three causes: the great elevation of the ground, the nitrous substances with which it is strongly impregnated, and the general deficiency of cultivation. In the parts the Chinese have broken up, the temperature has risen in a remarkable degree; the heat increases, so to speak, from year to year, as cultivation advances; certain cereals, which at first did not thrive on account of the cold, now ripen remarkably well.

Mongolia, on account of its vast solitudes, has become the abode of a great number of wild animals. At almost every step, hares, pheasants, eagles, yellow goats, grey squirrels, foxes, and wolves are encountered. It is remarkable that the wolves of Mongolia attack men in preference to beasts; they may sometimes be seen to run through countless flocks of sheep, without doing them the least harm, in order to attack the shepherd. In the neighbourhood of the Great Wall they frequently enter the Tartar-Chinese villages, go to the farms, and

disdaining the domestic animals they meet in the farm-yards, proceed straight into the house in search of their victims, whom they seize by the neck, and strangle. There is scarcely a village in Tartary that has not every year to deplore some misfortune of this nature.

The stag, the wild goat, the horse, the wild camel, the yak, the black and brown bear, the lynx, the ounce, and the tiger, haunt the deserts of Mongolia. The Tartars never travel except well armed with bows, guns, and lances.

When we think of the horrible climate of Tartary, of the frozen, gloomy aspect nature there wears, we might be tempted to think that the inhabitants of such savage countries must be of a harsh and fierce character; and their physiognomy, their air, even their costume, would appear to support the opinion. The Mongol has a flat face, high cheek bones, a short and retreating chin, the forehead slanting backwards, small obliquely-cut eyes, strongly tinged with bile, coarse black hair, a scanty beard, and the skin dark brown, and extremely coarse. The Mongol is of moderate stature, but his large leather boots, and wide sheep-skin robe, give the person a short and squat appearance. To complete the portrait must be added a clumsy, heavy gait, and a harsh, shrieking language, bristling with terrible aspirations.

Yet, notwithstanding this harsh and savage exterior, the Mongol is full of gentleness and humanity; he passes suddenly from the wildest and most extravagant gaiety to a melancholy that is not repulsive. Timid to excess in general, when excited by fanaticism or the desire of vengeance, he displays an impetuous courage that nothing can arrest; he is simple and credulous as a child, and is passionately fond of stories and marvellous recitals. To meet a travelling lama he always reckons a piece of extreme good fortune.

The vices generally attributed to the Mongol Tartars are, aversion from labour, love of pillage and rapine, cruelty, and debauchery; and we are inclined to believe

that the portrait given of them by old writers was not exaggerated. But do the Mongols of the present day resemble their ancestors? We believe ourselves justified in affirming the contrary, at least in great part. We have always found them generous, frank, hospitable; inclined, it is true, like ill-brought up children, to appropriate little objects of curiosity, but in no manner addicted to what may be called robbery. As for their aversion from labour and a sedentary life, they are much the same as they always were: it must also be admitted that their morals in some points are very lax; but their conduct, in this respect, proceeds more from thoughtlessness than corruption, and we rarely find among them the hideous and brutal excesses to which the Chinese are so violently addicted.

The Mongols are strangers to every species of industry; their felt carpets, skins coarsely tanned, and some few articles of sewing and embroidery, are not worth mentioning; but, on the other hand, they possess, in high perfection, the qualities of a pastoral and nomadic people, in the prodigious development of the senses of sight, hearing, and smell.

Huc.

LIFE'S DECAY.

That time of year thou may'st in me behold
When yellow leaves or none or few do hang
Upon those boughs which shake against the cold,
Bare ruined choirs where late the sweet birds sang.
In me thou seest the twilight of such day
As after sunset fadeth in the west,
Which by-and-by black night doth take away—
Death's second self that seals up all in rest.
In me thou seest the glaring of such fire,
That on the ashes of his youth doth lie,
As the death-bed whereon it must expire,
Consumed with that which it was nourished by.
This thou perceiv'st, which makes thy love more strong,
To love that well which thou must leave ere long.

Shakspeare.

THE CLOUD.

I bring fresh showers, for the thirsting flowers,
 From the seas and the streams ;
 I bear light shades for the leaves when laid
 In their noon-day dreams ;
 From my wings are shaken the dews that waken
 The sweet birds every one,
 When rocked to rest on their mother's breast,
 As she dances about the sun.
 * I wield the flail of the lashing hail,
 And whiten the green plains under ;
 And then again I dissolve it in rain,
 And laugh as I pass in thunder.
 I sift the snow on the mountains below,
 And their great pines groan aghast ;
 And all the night 'tis my pillow white,
 While I sleep in the arms of the blast.
 Sublime on the towers of my skiey bowers,
 Lightning, my pilot sits ;
 In a cavern under is fettered the thunder—
 It struggles and howls at fits :
 Over earth and ocean, with gentle motion,
 This pilot is guiding me,
 Lured by the love of the genii that move
 In the depths of the purple sea :
 Over the rills, and the crags, and the hills,
 Over the lakes and the plains,
 Wherever he dream, under mountain or stream,
 The spirit he loves remains ;
 And I, all the while, bask in heaven's blue smile,
 Whilst he is dissolving in rains.
 I am the daughter of earth and water,
 And the nursling of the sky ;
 I pass through the pores of the ocean and shores ;
 I change, but I cannot die.
 For after the rain, when, with never a stain,
 'The pavilion of heaven is bare,
 And the winds and sunbeams, with their convex gleams,
 Build up the blue dome of air,
 I silently laugh at my own cenotaph,*
 And out of the caverns of rain,
 Like a child from the womb, like a ghost from the tomb,
 I arise and unbuild it again.

Shelley.

* Cenotaph, monument erected in memory of one buried elsewhere.

MIGRATION OF A KIRGHIS TRIBE.

- Antediluvian** [L., *ante*, before, and *diluvium*, a flood—*diluo*, I wash off or away; I dissolve, cause to melt: and simply, I wash], *adj.*, existing *before the deluge* or flood.
- Declivity** [L., *declivitas*, -*atis*, a sloping place—*declivis*, down hill, steep—*clivus*, a slope—root *cli* or *clin*, as in *declino*, *inclino*, etc.], *n.*, a place that *declines* or *slopes downwards*; inclination downward; a gradual descent.
- Cavalcade** [It., *cavallo*; Sp., *caballo*; Fr., *cheval*; L., *caballas*; Gr., *kuballes*, a horse], *n.*, a train of persons on horseback.
- Apathy** [Gr., *a*, want of, and *pathos*, feeling], *n.*, *want of feeling*; indifference.
- Refractory** [L., *refringo* (*refractum*), I break up, or break open, break in pieces, destroy—*re*, back, and *frango*, I break], *adj.*, *breaking through rules*; unruly; unmanageable; obstinate; perverse.

When the first pale yellowish streaks were seen breaking over the steppe, and extending in narrow lines along the horizon, each few minutes added light and depth to their colour, till they changed through all the shades of orange to a deep crimson, far more brilliant than ruby. Still the plain was a dark purple grey, and all objects upon it were indistinct, and almost lost in gloom. As one group of cattle after another rose out of the dusky vapour that shrouded the earth, they appeared magnified, which caused the neck and head of the camel to assume the proportions of some mighty antediluvian monster stalking over the plain; while the huge forms of the other creatures aided in the allusion.

Gradually the whole scene changed, and the commotion in the aoul began; the bulls were up and bellowing, as if calling and marshalling their herds together for the march. Turning in another direction, the horses were seen with their heads thrown aloft and snorting; others were plunging and kicking furiously; while the sheep and goats, with their kids and lambs, seemed just rising into existence. A little later, as the sun rose, the plain

was seen covered far and wide with myriads of living animals.

Soon after daylight; long lines of camels and horses were seen wending their way in a south-westerly direction, followed by herds of cattle. The sheep and goats were innumerable; they stretched over miles of country, and were following slowly in the rear. With each herd and flock there were a number of Kirghis, mounted on good horses; these galloping to and fro added greatly to the general effect.

At the aoul, women in their best attire were taking down the yourts, and securing them on camels. Their household goods were being packed up by boys and girls, after which they were loaded on camels, bulls, and cows. These children of the steppe are not long in making their preparations to depart in search of new homes. In less than three hours all were ready, when we sprang into our saddles and rode away.

The camels formed a most curious portion of the spectacle, with the willow frame-work of the yourts hanging from their saddles, giving them the appearance of huge animals with wings just expanding for a flight. Others were loaded with the voilock coverings, placed across their packs, piled up high, and crowned with the circular top of the yurt. The poor creatures had burthens far larger than themselves, under which they evidently walked with difficulty.

Then followed a string of bulls with bales of Boharian carpets slung over their saddles, and boxes and other household utensils placed above. Then a refractory bull was seen similarly loaded, with the large iron cauldron on the top. The furious beast went rushing on; presently the straps gave way, and the cauldron went rolling down the declivity. Seeing this he became frantic, leaping and plunging, and at each bound a part of his load was left behind. As the bales rolled over, he charged at them vigorously, and soon got rid of all his encumbrances. He now rushed at every horseman who

happened to be in his course, and several had narrow escapes; at last he took refuge among the herd.

The kounis bag, with its contents, so precious to Kirghis, was secured on a grave and careful bull, who moved along with stately dignity.

After these a number of cows joined in the procession, having two leathern bags secured on their backs with a young child sitting in each, watching the crowd of animals as they bounded past. Mingled with this throng were women dressed in their rich Chinese silk costumes, some crimson, others yellow, red, and green, and the older females in black velvet kalats. A few of the young girls had foxskin caps, and others silk caps, richly embroidered in various colours.

The matrons wore white calico head-gear, embroidered with red, hanging down over their shoulders like hoods. Many were mounted on wild steeds, which they sat and managed with extraordinary ease and skill. Girls and boys were riding various animals, according to their ages; some of the elder ones, horses; others, young bulls; and some were even mounted on calves, having voilock boots secured to the saddles, in which the young urchins inserted their legs, guiding the beast by a thong secured to his nose. This was a cavalcade to be seen only in these regions.

A ride over the plain of somewhat more than two hours brought us to the foot of the mountains. We crossed a low hill, and beheld the entrance to the pass, which appeared filled with a mass of animals moving slowly onward. Turning towards the north, vast herds of cattle were seen, extending as far as my vision could reach, marching from various points in the steppe towards their pastures in the mountains; and through this pass the enormous multitude must ascend.

Having stood a short time watching the living tide roll on, I rode into the valley and joined the moving mass.

The mouth of the pass was about 300 yards wide, between grassy slopes, up which it was impossible for

either man or animal to climb. The whole width, and as far as I could see, was filled with camels, horses, and oxen. Kirghis were riding among them, shouting and using their whips on any refractory brute that came within their reach. At length we plunged into a herd of horses, with camels in the front, and bulls and oxen in our rear. We presently passed the grassy slopes to where the gorge narrowed to about 100 yards in width, with precipices rising up on each side to the height of 600 to 700 feet. From this-mob of quadrupeds there was no escape on either side, and to turn back was utterly impossible, as we were now wedged in among wild horses. These brutes showed every disposition to kick, but, fortunately for us, without the power, the space for each animal being too limited. This did not, however, prevent them from using their teeth, and it required great vigilance and constant use of the whip to pass them.

As we rode on, the scene became fearfully grand: the precipices increased in height at every hundred yards we advanced. In one place there were overhanging crags 900 feet above us, split and rent into fragments, ready apparently to topple over at the slightest impulse, while higher in the pass the scenery became more savage. Then we had the shouting of the men, the cry of the camels, the shrieks and snorting of the horses when bitten by their neighbours, with the bellowing of the bulls and oxen in our rear,—a wonderfully savage chorus, heightened by the echoes resounding from crag to crag, accompanied by a constant drone in the distant bleating of an immense multitude of sheep.

The bottom of the gorge ascended rapidly, which enabled me to look back, when I saw, about fifty paces in our rear, a phalanx of bulls which no man would dare to face—even the Kirghis kept clear of these. They came steadily on, but the horses near them plunged and reared when the sharp horns gored their haunches. Another danger presently beset us. The Kirghis said, a

little farther on the gorge was strewn with fallen rocks and small stones, and that riding over these would require great care, for if one of our steeds fell, it would be fatal to both horse and rider. Shortly we came to a recess in the precipice, and here two children, mounted on young bulls, had taken refuge. Having escaped from the crowd of animals, they had clambered up among the rocks, and the four were looking down at the passing mass in perfect calm. Poor creatures! it was impossible to reach them, or afford them the least aid. The only thing that could be done was to urge them to remain still where they were.

The rough ground that had been mentioned by the Kirghis was now distinctly seen by the motion of the animals before us. Hitherto the stream of heads and backs had run smoothly on: now, however, it became a rapid, where heads and tails were tossed aloft in quick succession. We were approaching some jutting masses that formed a bend in the gorge. On reaching these, a terrific scene burst upon us. The pass was narrowed by huge blocks fallen from above, one of which was thirty-five to forty feet high, and somewhat more in width, standing about twenty paces from the foot of the rocks, and about 200 yards from us. The prospect was fearful, for, as we rode on, the horses were being wedged more closely together between the frowning cliffs. All looked with anxiety at the pent-up tide of animals struggling onward, till they burst over the rocky barrier.

Each few minutes brought us nearer the danger. Not a word was spoken, but every eye was fixed on the horses bounding over the rocks. Several fell, uttering a shriek, and were seen no more. Instinct seemed to warn the animals of their impending danger: they were, however, forced along by those behind; nor was it possible for us to see the ground over which we were riding. At length we came among the crowd of leaping horses; our own made three or four bounds, and the dreaded spot was passed. The gorge opened out wider: still it was filled

with camels and horses moving slowly onward. To stop and look back was impossible, as the living stream came rushing on.

Although accidents are often fatal to the people on this spot, and many animals belonging to each tribe are killed on the journey to and from the mountains, such is the apathy of these Asiatics, that they never think of removing a single stone. After the herds are passed, whatever remains of camel, horse, or any other animals, is gathered up, and feasted upon by the people.

Atkinson's Amoor.

A TRIBUTARY KING.

Ceremony [L., *cæremonia*, a religious usage or rite—perhaps from *curo* (old form *cæro*), I care for], *n.*, *care for what is sacred*; a sacred rite; the outward form, religious, or otherwise. Here, = state.

Bouquet [Fr., *bouquet*, a nosegay; bunch; cluster of trees, etc.; tuft of hair; wisp of straw; present, etc.—*bosquet*, a grove, thicker—It., *bosco*, a wood], *n.*, a bunch of flowers; a nosegay.

Amenity [Fr., *aménité*; L., *amœnitas*, pleasantness, a delight, pleasure—*amœnus*, pleasant, delightful, charming], *n.*, *pleasantness*; agreeableness.

Utensil [Fr., *utensile*,—L., *utensilis*, that may be used, fit for use, useful; *utensilia*, -ium, things for use, *i.e.*, utensils, materials, necessities, etc.—utor, I use], *n.*, *lit.*, *that which is used*; an instrument or vessel used in common life.

Towards noon we perceived before us a multitude of people defiling through a narrow gorge, formed by two steep mountains. A long train of camels laden with baggage followed, escorted by a crowd of richly-dressed horsemen. We slackened our march to examine the caravan more nearly. Four cavaliers, forming a sort of advanced guard to the main body, galloped towards us. They were mandarins; the blue globe surmounting their cap of ceremony was the sign of their dignity.

"Reverend lamas, peace be with you!" said they.
"To what land are your steps directed?"

"We are from the heavens of the West, and we go towards the West. And you, Mongolian brothers, where are you going in such great numbers, and in such magnificent equipage?"

"We are from the kingdom of Alechan; our king is travelling to Pekin, to prostrate himself at the feet of the Son of Heaven."

The horsemen rose a little in their saddles to salute us, and then resumed their position at the head of the caravan.

After the advanced guard came a palanquin, carried by two magnificent mules, harnessed one before and the other behind, between gilded shafts. The palanquin was square, ornamented with silken fringes, and the top and the four sides painted in figures of dragons, birds, and bouquets of flowers. The Tartar monarch was seated cross-legged; he looked about fifty years of age, and his physiognomy was extremely good.

As we passed, we cried out, "King of Alechan, may peace and happiness attend thy steps!"

"Men of prayers," he replied, "rest in peace!" and accompanied his words by a gesture full of amenity. An old lama, with a long white beard, and mounted on a magnificent camel, led the first mule of the caravan. The grand marches of the Tartars are generally under the guidance of the oldest lama in the country, as these people are persuaded that they have nothing to fear on the road so long as they have at their head a representative of the divinity, or rather the divinity himself incarnate in the person of a grand lama.

Immediately after the king's equipage came a white camel of extraordinary size and beauty, led by a young Tartar on foot. This camel was not loaded, but from the tips of his ears and his two humps fluttered pieces of yellow taffety. This magnificent animal was, no doubt, destined for a present to the emperor. The rest of the

troop was composed of the numerous camels who carried the baggage,—the tents, chests, pots, and the thousand and one utensils necessary to be carried on a journey in a country where there are no inns on the road.

The caravan had passed some time when we came to a well, and decided, in consequence, on pitching our tent. Whilst we were making our tea, three Tartars, one of whom was decorated with the red ball, and the other two with the blue, alighted at the door, and asked how long it was since the carriage of the King of Alechan had passed. We informed them that we had passed it some hours before, and that it would probably reach the Hundred Wells before nightfall.

"In that case," was the reply, "we shall stop here; that will be better than running the risk of falling down some precipice in reaching the Hundred Wells at night. We can easily overtake the caravan to-morrow morning."

Hereupon the Tartars promptly unsaddled their horses, and sent them to seek their fortune in the desert; and then, without ceremony, came and sat down by our fire. These personages were *taitsis*; or nobles of Alechan. The one wearing the red ball was the king's minister; and the evening before they had stopped to visit one of their friends, a prince of the Ortous, and had been left behind by the rest of the caravan.

The minister seemed a man of a frank disposition and penetrating judgment; to the Mongol good-nature he joined lively and elegant manners, acquired, no doubt, in his frequent journeys to Pekin.

He put many questions to us relative to the country the Tartars call the "Western Heaven." It is needless to say that their geographical knowledge is not very extensive; the West, with them, simply means Thibet, and some surrounding countries of which they have heard from the lamas who have made the pilgrimage to *Lha-Ssa*. They firmly believe that there is nothing beyond Thibet. "The world ends there," say they; "beyond

there is nothing but a shoreless sea" In our turn we asked them many questions respecting the journeys of the Tatar sovereigns to Peking

"We go," said they, "to attend our king, it is only kings who have the happiness of prostrating themselves before the *Old Buddha*" (the emperor) They afterwards entered into long details respecting the ceremonies of the new year, and on the relation of the Chinese emperor to the tributary kings

These kings are bound to the payment of certain dues, which, under the gentle name of "offerings," are neither more nor less than imposts, which they are not at liberty to withhold These "offerings" consist of camels, horses, remarkable for their beauty, venison, deer, kids, and bears, aromatic plants, pheasants, mushrooms, fish, etc As they travel to Peking in cold weather, the provisions are all frozen, and keep a long time even after they have reached their place of destination. *Huc.*

— o —

INFANCY.

— —

Our birth is but a sleep and a forgetting
The soul that rises with us, our life's star,
Hath had elsewhere its setting,
And cometh from afar
Not in entire forgetfulness,
And not in utter nakedness,
But trailing clouds of glory do we come
From God who is our home
Heaven lies about us in our infancy!
Shades of the prison-house begin to close
Upon the growing boy,
But he beholds the light, and whence it flows,
He sees it in his joy,
The Youth, who daily farther from the east
Must travel, still is Nature's priest,

And by the vision splendid
 Is on his way attended;
 At length the Man sees it die away,
 And fade into the light of common day.
 Earth fills her lap with pleasures of her own;
 Yearnings she hath in her own natural kind,
 And, even with something of a mother's mind,
 And no unworthy aim,
 The homely muse doth all she can
 To make her foster-child, her innately man,
 Forget the glories he hath known,
 And the imperial palace whence it came.

Wordsworth.

— o —

A CHINESE LANDSCAPE.

Teeming [A.-S., *tyman*, *te-man*, to produce], *pr p.* and *adj.*, *bringing forth*, producing; prolific; full of.

Sombre [Fr., *sombre*; Sp., *sombra*, a shade—L., *sub*, under, and *umbra*, a shade], *adj.*, *lit.*, *under a shade*; dull; melancholy; gloomy.

Dynasty [Gr., *dynastēs*, a lord, master, ruler—*dynamai*, I am able, capable, strong

enough], *n.*, *lit.*, *lordship*; a succession of kings of the same family.

Gorgeous [Old Fr., *gorgias*, beautiful—*gorgias*, a ruff; Prov. *gorgiens*, neck-armour = Fr., *gorgerin*, the gorget, or armour for the neck—*gorge*, throat], *l.*, *lit.*, *decorated as with a gorget*; showy; splendid.

While I am still on a little eminence, from which I have been viewing man, let me turn to other and not less beautiful works of nature. Behind me lies a large and fertile valley,—the same through which I had passed during the night,—intersected in all directions with navigable canals, and teeming with an industrious and happy people. As it was now “the bounteous month of May,” the rice crop had been some time in the ground, and the valley was consequently covered with dense masses of the loveliest green. Water-wheels were ob-

served in all directions, some worked by men, and other and larger ones by bullocks, and all pouring streams of water upon the rich crops, from the various canals which intersect the valley.

At the foot of the hills, near where I stood, were numerous small tea-farms, formed on the slopes; while groups of junipers, and sombre-looking pines, marked the last resting-places of the wealthy. The ancient tombs of the Ming dynasty are also common here, but they are generally in a ruinous condition; and had it not been for the huge blocks of granite, cut into the forms of men and other animals, of which they are composed, there would have been long ago no marks to point out the last resting-place of these ancient rulers of China. So much for human greatness!

Higher up on the hill-sides, the ground was cultivated, and ready to receive the summer crops of sweet potatoes and Indian corn. Beyond that again were barren mountains, covered with long grass and brushwood, which the industry of the Chinese is never likely to bring under cultivation. Both below and above, on the road-sides, in the hedges, and on every spot not under cultivation, wild flowers were blooming in the greatest profusion. But look a little higher up, to that gorgeously painted hill-side, and see those masses of yellow and white flowers. Among these, and scattered over the hill-sides, are azaleas, having flowers of many different hues, and all very beautiful.

It is still early morning; the sun is just appearing on the tops of the Eastern mountains; the globules of heavy-dew sparkle on the grass and flowers; the lark and other sweet songsters of the feathered race are pouring out of their little mouths sweet and melodious songs. I looked with delight on the beautiful scene spread out before me, and thought within myself, if nature is so beautiful now, what must it have been before the fall, when man was holy? *Fortune.*

A DAY IN THE JUNGLES OF CEYLON.

Salutation [L., *salutatio*, -onis—*saluto*, I keep safe, preserve; greet, wish health to, salute—*salus*, *salutis* (contr. of *salutus*, from *salvus*), a sound or whole condition, health, welfare, prosperity], *n.*, the act of saluting, greeting, or paying respect.

Reveille [Fr., *réveil*, awaking—*réveiller*, to awake, wake, call up—*re* again, and *veiller*, to wake, to be awake, to watch], *n.*, the sound of the

drum or trumpet at day-break to awaken soldiers.

Fulgent [L., *fulgens*, *fulgentis*, shining, glittering—*fulgeo*, I flash, glitter, gleam, shine], *adj.*, *shining*; bright; dazzling.

Crepuscular [L., *crepusculum*, lit., little night; twilight, little daylight, the dusk of evening (opp. to *diluculum*, dawn)—*creper*, dusky, dark, obscure], *adj.*, of or pertaining to twilight.

With the first glimmering of dawn, the bats and nocturnal birds retire to their accustomed haunts, in which to hide them from "day's garish eye;" the jackal and the leopard steal back from their nightly chase; the elephants return timidly into the shade of the forest, from the water-pools in which they had been luxuriating during the darkness; and the deep-toned bark of the elk resounds through the glens as he retires into the security of the forest. Day breaks, and its earliest blush shows the mists tumbling in turbulent heaps through the deep valleys.

The sun bursts upward with a speed beyond that which marks his progress in the cloudy atmosphere of Europe, and the whole horizon glows with ruddy lustre:—

"Not as in northern climes, obscurely bright,
But one unclouded blaze of living light."

At no other moment does the verdure of the mountain woods appear so vivid; each spray dripping with copious dew, and a pendant brilliant twinkling at every leaf; the grassy glade is hoar with the condensed damps of night,

and the threads of the gossamer sparkle like strings of opal in the sunbeams.

The earliest bird upon the wing is the crow, which leaves its perch almost with the first peep of dawn, cawing and flapping its wings in the sky. The parroquets follow in vast companies, chattering and screaming in exuberant excitement. Next, the cranes and waders, which fly inland to their breeding-places at sunset, rise from the branches on which they had passed the night, waving their wings to disencumber them of the dew; and, stretching their awkward legs behind, they soar away in the direction of the rivers and the far sea-shore.

The songster that first pours forth his salutation to the morning is the dial-bird, and the yellow oriole, whose mellow, flute-like voice is heard far through the stillness of the dawn. The jungle cock, unseen in the dense cover, shouts his reveille, not with the shrill clarion of his European type, but in a rich melodious call, that ascends from the depth of the valley. As light increases, the grass-warbler and maynah add their notes; and the bronze-winged pigeons make the woods murmur with their plaintive cry, which resembles the distant lowing of cattle. The swifts and swallows sally forth as soon as there is sufficient warmth to tempt the minor insects abroad; the bulbul lights on the forest trees, and the little gem-like sunbirds (the humming-birds of the East) quiver on their fulgent wings above the opening flowers.

At length the fervid morn approaches; the sun mounts high, and all animated nature begins to yield to the oppression of his beams. The green enamelled dragon-flies still flash above every pool in pursuit of their tiny prey; but almost every other winged insect instinctively seeks the shade of the foliage. The hawks and falcons now sweep through the sky, to mark the smaller birds which may be abroad in search of seeds and larvae. The squirrels dart from bough to bough, uttering their shrill, quick cry; and the cicada, on the stem of the palm-tree, raises the deafening sound whose tone and

volubility have won for him the expressive title of the "knife-grinder."

It is during the first five hours of daylight that nature seems literally to teem with life and motion; the air melodious with the voices of birds, the woods resounding with the simmering hum of insects, and the earth replete with every form of living nature. But as the sun ascends to the meridian the scene is singularly changed, and nothing is more striking than the almost painful stillness that succeeds the vivacity of the early morning. Every animal disappears, escaping under the thick cover of the woods; the birds retire into the shade; the butterflies, if they flutter for a moment in the blazing sun, hurry back into the damp shelter of the trees, as though their filmy bodies had been parched by the brief exposure; and at last silence reigns so profound that the ticking of a watch is sensibly heard, and even the pulsations of the heart become audible.

The buffalo now steals to the tanks and watercourses, concealing all but its gloomy head and shining horns in the mud and sedges: the elephant fans himself languidly with leaves to drive away the flies that perplex him; and the deer cower in groups under the over-arching jungle. Rustling from under the dry leaves the bright green lizard springs up the rough stems of the trees, and pauses between each dart to look inquiringly around. The woodpecker makes the forest re-echo with the restless blows of his beak on the decaying bark, and the tortoise drops awkwardly into the still water, which reflects the bright plumage of the kingfisher, as he keeps his lonely watch above it.

So long as the sun is about the meridian, every living creature seems to fly his beams, and linger in the closest shade. Man himself, as if baffled in all devices to escape the exhausting glare, suspends his toil; and the traveller, abroad since dawn, reposes till the midday heat has passed. The cattle pant in their stifling sheds, and the dogs lie prone upon the ground, their legs extended far

in front and behind, as if to bring the utmost portion of their body into contact with the cool earth.

As day declines, nature recovers from the languor and exhaustion; the insects again flutter across the open glades, the birds venture once more upon the wing, and the larger animals saunter from under cover, and move away in the direction of the ponds and pastures. The traveller recommences his suspended journey, and the husbandman, impatient to employ the last hours of fading night, hastens to resume the interrupted labours of the morning. The birds which had made distant excursions to their feeding-grounds, are now seen returning to their homes; the crows assemble round some pond, to dabble in the water and readjust their plumes before retiring for the night; the parroquets settle with deafening uproar on the crowns of the palm-trees near their nests; and the pelicans and sea-birds, with weary wing, retrace their way to the breeding-place, near some solitary watercourse or ruined tank. The sun at last

"Sinks, as a flamingo
Drops into her nest at nightfall."

Twilight succeeds, and the crepuscular birds and animals awaken from their midday torpor, and prepare to enjoy their nightly revels. The hawk-moths now take the place of the gayer butterflies, which withdraw with the departure of light: innumerable beetles make short and uncertain flights in the deepening shade, and in pursuit of them and the other insects that frequent the dusk, the night-jar, with expanded jaws, takes low and rapid circles above the plains and pools.

Darkness at last descends, and every object fades in night and gloom, but still the murmur of innumerable insects arises from the glowing earth. The fruit-eating bats launch themselves from the high branches on which they have hung suspended during the day, and cluster round the mango-trees and tamarinds; and across the grey sky the owl flits in pursuit of the night-moth, on a

wing so soft and downy that the air scarcely betrays its pulsations.

The palm-cat now descends from the crest of the cocoa-nut, where she had lurked during the day, and the glossy genetie, emerging from some hollow tree, steals along the branches to surprise the slumbering birds. Meanwhile, among the grass, already damp with dew, the glow-worm lights her emerald lamp, and from the shrubs and bushes issue showers of fire-flies, whose pale green flashes sparkle in the midnight darkness, till day returns, and morning "pales their ineffectual fires."

Tennent.

EUROPE.

Meander, wind like a serpent.	Humid, moist, wet,
Undulations, wavy surface.	Constitute, make up, consist
Plummy, feathery.	of,
Intervening, coming between.	Diversified, varied.

Let us for a moment imagine ourselves raised in the air with the Mediterranean stretching beneath us like an irregular lake broken up by numerous headlands and bold promontories. The peninsulas of Greece, Italy, and Spain, are laid like pieces of golden pavement on the face of the waters. As we come nearer, we see that these are distinguished by huge mountain undulations—the intervening valleys and fertile hill-slopes glowing with terraced gardens. There, too, groves of laurel, orange, and olive abate with their grey green shadows the burning heats of the marble rocks.

Then let us pass farther towards the north, till we reach the green pastures and snow-crowned peaks of Switzerland, the poplar valleys of France, and the dark pine forests of the Danube, the Carpathians, and Central Europe; which stretch from the mouths of the Loire to those of the Volga.

Still farther north we find barren rock and heathy moor bordering green fields and woods; while near the coast numerous irregular islands are washed by the storm-beaten seas. At length forest trees fail, the hungry north wind bites the hills into barrenness, and we can just discern, by a polar twilight, sheets of Arctic ice gleaming in the distance.

Such is a bird's eye view of Europe, which although the smallest, is by far the most important of the great divisions of the earth.

The area of Europe is not more than one-third that of Africa, about one-fourth that of America, and but little more than a fifth that of Asia. Its loftiest mountains cannot be compared to the Andes or the Himalaya. Many of the tributaries of the Amazon and Mississippi are broader, deeper, and longer than the Danube or Volga; and all the downs and waste lands of Europe are as nothing when compared with the sandy plains of Africa.

In Europe the productions of the animal, vegetable, and mineral kingdoms are comparatively few and insignificant. Its mines do not abound in gold; the diamond is not found among its minerals. Some animals, such as the horse, sheep, and dog, have been greatly improved by care in breeding; but the most valuable natural productions have been imported from other parts of the world. Gold, silver, tea, coffee, sugar, cotton, silk, and a thousand other things which satisfy our wants or add to our enjoyment are derived from other lands.

The general outline of Europe is most irregular, it being distinguished for the length of its coast line, and the number and extent of its inland seas.

Eastern and central Europe consists of a vast plain, which occupies about two-thirds of the whole continent; extending from the Black Sea to the Arctic, and from the Ural mountains to the German Ocean. It embraces nearly the whole of Russia, North Germany, Holland, Belgium, and the north-west parts of France, and is

watered by the Volga, the Danube, the Rhine, and numerous smaller streams.

The remaining part of the continent is highly diversified, combining lofty mountain ranges, as the Alps, Pyrenees, and Apennines; with well watered plains and valleys famed for their beauty and fertility, as the plain of Lombardy and the valley of the Rhine.

Perhaps in no other part of the world is there a district of equal extent possessing such a variety of surface and scenery. In one direction we find mountain-chains with bare and barren peaks crowned with eternal snows, down whose fleecy sides rush noisy streams to find repose in the blue and placid lake below. In another direction, dense forests, or rich corn-fields, vineyards, and pasture land, watered by innumerable streams, on whose banks stand numerous busy towns and cities, afford scenes which though less striking, are full of variety and interest.

Europe being situated almost entirely in the temperate zone, the climate is more uniform than that of the other great divisions. Speaking generally, the east is colder and drier than the west which is tempered by humid breezes from the Atlantic.

In northern Europe there are only two seasons—a three months' summer, and a nine months' winter. During the former, owing to the great length of the days, the heat is intense and the growth of vegetation exceedingly rapid. During the latter, the cold is extreme, and for several months everything is covered with a mantle of snow.

In central Europe the four seasons are distinct; and neither the summer heat nor the winter cold are so severe as in the north.

Southern Europe has scarcely any winter; frost and snow being of rare occurrence. The sugar cane attains tropical luxuriance in Sicily and Granada, the orange perfumes the air, the streams meander between banks clothed with the laurel and the myrtle, while the vine

and the olive constitute the wealth of the husbandman. These countries are subject to heavy rains in the latter part of the year, and to severe droughts in summer.

The cold winds from Asia tend to lower the temperature of Europe; the hot blasts of Africa to raise it; while the humid and more uniform atmosphere of the Atlantic has a modifying influence.

SUMMARY.—Southern Europe consists of three great peninsulas stretching into the Mediterranean. North of them are the Alps and other mountain ranges. The whole of central Europe is a vast plain. Although the least in extent, Europe is the most important of the continents, owing to the superior intelligence, enterprise, and industry of its inhabitants. Its natural productions are few. It possesses, however, rich stores of coal and iron, and its domestic animals are unequalled. Northern Europe has a hot, short summer, and long, dreary winter. In the centre the climate is more uniform, while the south has scarcely any winter, and yields the products of tropical countries.

QUESTIONS.—Compare Europe in extent with the other continents. In what respect does it excel them all? Name some of the things we get from Asia, Africa, or America. Describe the climate of northern, of central, and of southern Europe. How is the European climate modified?

MY FRIEND IN THE WOOD.

Methought a thrush upon a tree
Sweetly sang one day to me,
"Poet, poet, hear me, hear me!"
"Hear thee," I at once replied:
"Honest fellow, ay, with pride."
And then he poured out such a tide
Of joy to cheer me.
"Happy, happy bird," said I,
"Ever would I linger by."
"Poet, poet, hear me, hear me!"
Loud and louder yet he sang,
Till the distant woodlands rang
With his wild and merry clang,
And all to cheer me.

Cayenne.

GASES.

Gaseous, thin, light, and often invisible.	Nozzles, the ends of tubes or pipes, often turning.
Vapour, an airy fluid easily turned into a liquid.	Chemist, one who studies chemistry.
Puzzle, to make hard, to perplex.	Liquids, fluids, or flowing substances, like water.

I suppose you all think you know what a gas is. But I believe it would puzzle most of you to give a proper answer to the simple question, "What is a gas?" Read this lesson very carefully, and then, perhaps, you will be able to answer the question.

A great many persons know only two gases; the air around us which we breathe, the coal-gas which is used for lighting purposes. But there are a great many more gases than these. Let us first of all, however, get a clear notion of the nature of a gas.

All the things or bodies with which we are acquainted are found to be in one of three states or conditions. They may be *solid*, like a bit of wood or metal, or a stone; or again, they may be *liquid* like water; and lastly, they may be in a thin, light, airy state, like the coal-gas just spoken of. This last state is called the *gaseous* state.

Gases are so very light and thin that most of them are invisible. You cannot see the air, or the common coal-gas as it comes out of the nozzles of the pipes.

There are a few gases, however that can be seen. One of them is *chlorine*, a gas of a yellowish green colour, and of a very disagreeable smell. This is the gas which you smell in chloride of lime, used for the purpose of overpowering more unhealthy smells.

I hope you remember the lesson on the Elements. For some of the gases are elements. I will give you a list of these gases, and as they are very few, you might try to remember their names. They are oxygen, hydrogen, nitro-gen, and lastly, chlorine, just mentioned. It is supposed that there is one more called ozone; but

our cleverest chemists have not yet properly examined it, and indeed can hardly get hold of it.

All these gases are very useful, so useful in fact that we could not live without them, and yet perhaps this is the first time you have heard their names. How useful they are, you will understand when I tell you that oxygen and hydrogen form that most precious of all drinks—water.

Again, oxygen and nitrogen almost entirely compose our air. We could not live at all without air, and you have been taught that we cannot live very well without *fresh* air.

Although there are so very few simple gases, there are a very great many compound ones. By a compound one, you remember, I mean one which is made up of two or more gases.

Common coal-gas, or street-gas, as it is sometimes called, is a compound, being a mixture of many gases. All the three gases first mentioned in our little list are found in it.

You know that a steam-engine is set to work by steam, and that steam is made by boiling water. Well steam is a kind of gas. But if you cool steam, you get water again at once. This is called *condensing*.

Those aerial fluids that are easily brought back to their usual condition of liquids, are not called gases, but *vapours*. Steam, then, properly speaking, is the *vapour* of water.

You might cool oxygen and hydrogen for a very long time before they would become liquid. In fact, they never have been made into liquids.

It may be interesting to you to learn that the word *gas* meant at one time a ghost or spirit. Gases were so named because, although invisible, some could extinguish a flame, or cause death, while others, like the "Will-o'-the-wisp," could frighten people in lonely places. But we know better now, and we can laugh at all those old notions.

In this lesson you read that both air and water are

made up of other substances; and in the lesson on the elements you learnt that limestone, which is common enough in the earth, is also a compound. Similarly, earth, air, and water are *not* elements as they used to be considered.

SUMMARY.—There are three states in which bodies may exist. These states are the solid, liquid, and gaseous. There are at least four simple gases. Oxygen and hydrogen form water. Oxygen and nitrogen mainly form the air. Chlorine is a disagreeable smelling gas, and yellowish-green in colour. There are many compound gases, coal gas is one. A vapour is a gas easily turned into a liquid, as steam. The word *gas* at first meant ghost. Will-o'-the-wisp is merely a column of flaming gas moving about of itself. Neither earth, air, nor water are elements.

QUESTIONS—What are the three states of bodies? What is a gas? Name the simple gases. Of what are air, water, and chloride of lime formed? Name some compound gases. What is a vapour? What was the origin of the word *gas*?

THE FLOWERET.

Through the forest idly
As my steps I bent,
With a free and happy heart
Singing as I went,
Cowering¹ in the shade,
Did a floweret spy,
Bright as any star in heaven,
Sweet as any eye.

Down to pluck it stooping,
Thus to me it said
"Wherefore pluck me, only
To wither and to fade?"
Up with its roots I dug it,
And bore it as it grew,
To my garden plot at home
And planted it anew,²
All in a still and shady place,
Beside my home so dear,
And now it thanks me for my pains,³
And blossoms all the year.

¹ Cowering, timidly concealing itself ² Anew, afresh, again.
³ Pains, trouble, care.

RUSSIA.

Basin, the country drained by a sea or river.	Emergency, a sudden necessity.
Feature, peculiarity.	Ailment, sickness.
Pasture, grass.	Distinct, separate.

This vast country, which embraces more than a half of the Continent of Europe, is almost entirely included in the great plain. It is not, however, perfectly level, there being three distinct slopes down which its waters are carried to the adjoining seas.

The northern slope, forming the basin of the White Sea, possesses a barren soil and a cold climate. Towards the north it stretches out into immense moss-covered plains, which are boggy in summer and frozen in winter. Its southern districts are covered with forests, only a few spots being cultivated.

The southern slope may be divided into three regions:—Central Russia, the steppés, and the country beyond the Volga.

Central Russia and Poland, extending from the Carpathian mountains to the Volga, improve towards the south, where there is much fertile land.

The steppés constitute an almost uninterrupted plain, covered in spring and autumn by a luxuriant herbage, in winter by drifting snows, and in summer by clouds of dust. The most singular feature of the steppés is the total absence of trees. A traveller may proceed in a straight line for hundreds of miles without seeing even a bush.

The chief inhabitants of these boundless plains are Tartars, who own the countless herds of horses, sheep, and cattle, which roam over their noble pasture grounds. One might as well attempt to steer a ship without a compass as to cross the steppé without a Tartar guide; but in his hands you are safe. He is prepared for every danger or emergency.

If your carriage breaks down, his little hatchet ever ready to his hand, speedily repairs it. If you want a rope, he will spin one out of the hairs of his horse's tail or the long wiry grass at your feet.

If you are unwell, he knows a herb which will serve as a remedy for the ailment. He is also familiar with every sign of change in the atmosphere, and knows nearly to a minute the hour of the day.

The third slope, which declines to the Baltic, extends from Prussia to the Gulf of Finland and the Lakes of Ladoga and Onega. It is in general a country of moderate fertility, interspersed with numerous lakes.

The climate of Russia is extreme in its character; the winters being colder and the summers hotter than in corresponding latitudes of Western Europe. In St. Petersburg, the winter extends from the end of September to the beginning of May, when it disappears all at once.

On an average, 230 days of the year are reckoned as belonging to winter; and for 160 of these the waters are fast bound with ice. In the Arctic regions the year may almost be said to consist of one long winter night and one long summer day.

The immense forests of Russia, which cover nearly a half of the country, afford the most important of its productions. They not only supply an abundance of fuel in a country almost destitute of coal; but they yield an unlimited quantity of timber, tar, pitch, potash, and turpentine. These form the chief exports of the country, in exchange for which the Russians obtain the productions of more genial climes.

St. Petersburg, the capital of Russia, stands on the Neva, and is one of the most splendid cities in Europe. It is very regularly built, with fine squares, streets, public buildings, and statues, which, however, lose much of their effect from the extreme flatness of the site.

The population of this half European, half Asiatic capital, is most varied. To begin with the military:

there are the Caucasian, the Tartar, and the Finland Guards. Here may be seen a Cossack trotting with his lance in rest; and further on a Circassian in his shirt of mail. Of all the endless variety of uniforms, specimens are always to be seen marching to parade, returning to their barracks, mounting guard, or performing various other duties of garrison life.

If now we turn to the civil section of the population, we find every nation in Europe, and almost every nation in Asia, represented in the streets. Spaniards and Italians, English and French, Greeks and Scandinavians, Persian and Chinese, mingle in the broad thoroughfares. The German peasant may be seen lounging among the noisy, bearded Russians; the slim Pole elbows the diminutive Finlander. Yankee sailors, Caucasians, Moors, and Mongolians; all sects, races, and colours, help to make up the populace of the Russian capital.

In winter, every one is wrapped in furs; in summer, light robes of muslin and silk are worn. In the morning, the costumes may be thin and light, while in the evening no one will venture abroad except in cloak or mantle. One day, everywhere snow and sledges; the next, mud and clattering wheels.

SUMMARY.—Russia, which embraces more than half of the Continent of Europe, comprises three distinct slopes. The northern slope forms the basin of the White Sea. The southern slope comprises Central Russia, the steppés, and the country beyond the Volga. The third slope declines to the Baltic. The steppés constitute an uninterrupted grassy plain, over which roam countless herds of horses, sheep, and cattle. The immense forests of Russia yield its most important productions. St. Petersburg, the capital, is a splendid city, regularly built, and containing handsome squares, streets, and public buildings. It is subject to great and sudden extremes of weather. The winter lasts from September to May.

QUESTIONS.—What is the general character of Russia? How may it be divided? Describe the steppés and their inhabitants. Give some particulars of Russian climate. Name the chief productions of its forests. Describe the population.

FRANCE.

Intelligence, clearness of understanding.	Deposit, something laid down.
Processes, ways or methods.	Invigorated, strengthened.
Elements, means, principles.	Picturesque, beautiful.
	Metropolis, chief city.

We are accustomed to hear more of "Franks," or Frenchmen, than of any other nation on the European continent. There are many reasons for this:—First, the French, under General Dupleix, once contended with the English for the sovereignty of India. Then, France is a very large country, for it occupies about four times the area of England; and, thirdly, it is a very rich country, not so much in minerals as in the fertility of the soil.

Above all, France is interesting to us as being the home of a nation remarkable for industry, intelligence, civilisation, and a warlike renown only second to that of England, or of its later gigantic antagonist, Germany. For the French have been for many centuries the great rivals of the English—formerly in battle, more or less up to the famous victory of Waterloo, but of late happily only in the arts of peace.

Indeed, if the English do not bestir themselves and seek to learn the best processes of manufacture and the surest elements of social progress, they will be beaten by them more effectually than they ever beat them on the field of battle. Nothing indicates the steps of progress in the arts more faithfully than the international exhibitions held, every ten years, in the respective centres of the two countries—Paris and London.

The fertility of France, like that of every other country, depends on its river-system. For are not the soils of the lowlands constantly being renewed by the earthy deposit conveyed by what may be styled the veins of a country? By means of rivers, as well as manures, the soil is invigorated, and thus enabled to bear the unceasing demands that every harvest makes on its materials.

France is blessed with the possession of twenty-one large rivers—five of which are reckoned among the largest in Europe. These are—the *Meuse* (falling into the Rhine), the *Seine* (English Channel), the *Loire* and the *Garonne* (Bay of Biscay), and the *Rhone* (Mediterranean). The issue of the war of 1870 practically renders the Rhine an exclusively German river.

Rich and fertile in its grain and beetroot, grapes and other fruits, as France is, it can scarcely be called a picturesque country. In general it is level and tame, though not on that account, entirely deficient in a certain kind of beauty.

Nevertheless, in particular districts, such as Brittany in the north-west, and the slopes of the Alps and Pyrenees in the south, besides the minor ranges of the Cevennes and Vosges, the scenery is equal in grandeur or grace to that of any part of the world. But, by way of contrast, may be mentioned the region of sandy flats, called the *Landes*, bordering the Bay of Biscay on the south. On the other hand, Normandy is beautiful.

The rivers above mentioned not only indicate the extensive coast-line of France—commanding the English Channel and the Atlantic on the one hand, and the Mediterranean on the other, but they also furnish a sure index to the great cities by which this noble country is adorned.

For example, the *Seine* at once suggests Paris, Rouen, and Havre; the *Loire*, Orleans, Tours, and Nantes; the *Garonne*, Bordeaux; and the *Rhone*, Lyons, together with the famous port of Marseilles. Of course, the greatest and grandest of all these cities is Paris, which is, in every sense, the heart and centre of France.

Though not so large as London, Paris is superior to it as a metropolis. No effort has been spared, especially by the late Emperor Napoleon, to enlarge and beautify it. The main streets, called Boulevards, intersect the city like avenues adorned with magnificent shops, cafés, and bazárs, all teeming with life absorbed in pleasure or business.

The public buildings, such as libraries, museums, and picture galleries, are fine structures, and the arrangements are so simple and practical that the public make use of them with pleasure. Lastly, from *every* part of the city there is easy access to superbly laid out gardens or promenades.

SUMMARY.—France occupies about four times the area of England; and is remarkable for its fertility, although not for its picturesqueness as a whole. The people are distinguished by intelligence, activity, and a love of social progress. In the arts and manufactures, too, they are worthy rivals of the English. In battle they have lately been vanquished by the Germans. The coast-line commands the North Sea, the Atlantic, and the Mediterranean. The chief cities are Paris, Lyons, Bordeaux, Rouen, Orleans, Nantes, and Marseilles.

QUESTIONS.—Why do we so frequently hear about France? What kind of people are the French? What means is there of comparing the progress in manufactures of the English and the French? What is the general character of the country? Name the chief rivers; the mountains; the leading cities.

THE LINNET CHOIR.

A linnet choir sang in a chestnut crown,—

A hundred perhaps, or more,—

Till the stream of their song went warbling down

And entered a cottage door;

And this was the burthen of their lay,

As they piped in the yellow tree:—

“I love my sweet little lady-bird.

And I know that she loves me:

‘Chip, chip, cherry chip, cherry, cherry, cherry chip!’

We linnets are a merry band,

A happy company.”

It chanced a poet passed that way,

With a quick and merry thought;

And, listening to the roundelay.

His ear their language caught:

Quoth he, as he heard the minstrels sing,
 "What heavenly harmony!
 I shall steal that song, and carry it home
 To my dear family—
 'Chip, chip, cherry chip, cherry, cherry, cherry chip!'"
 And that song they sing now every eve.
 His children, wife, and he: *Caperu.*

TURKEY.

Dominant, superior, prevailing.	Motley, mixed, varied.
Turban, a kind of head-dress.	Minaret, a slender tower
Perpetual, constant, unceasing.	Dilapidated, out of repair.

The greater part of Turkey is occupied by a series of lofty mountain ranges. These form and enclose high valleys and table-lands, leaving only in some places a narrow strip of low land along the seaboard. Such is its general character between the frontier of Greece and the Danube. To the north of this great river, however, the country sinks into a plain, which stretches to the borders of Russia and the Carpathians.

The climate of Turkey is superior to that of almost every other European country, and the soil is no less remarkable for its fertility. Still, owing to the insecurity of property, agriculture is little known and less practised. In the northern provinces, the pastures are luxuriant, and wheat might be raised in almost any quantity. Rice is common in the south, as well as barley and other grains. Excellent grapes are produced, and dates and olives in abundance.

Speaking generally, the country is in a most backward condition. The manufactures are few and unimportant, while trade and commerce are for the most part conducted by foreigners. The only roads are beaten pathways, made by one horseman followed by another, and every man may make one for himself if he

pleases. The only carriages consist of wooden planks laid upon rough wheels, drawn with cords by buffaloes.

The Turks, though forming but a small proportion of the population, are the dominant race of the country. In personal appearance, domestic habits, and almost every circumstance of life, they form a striking contrast to all other nations of Europe. The ample folds of their flowing garments, their shorn heads covered by a turban, their long beards and stately bearing, are the outward signs of a character and mode of life altogether different from that of the western race.

They are a fine-looking race of men, seldom below the middle size, with lofty foreheads, dark eyes, finely cut features, and limbs cast in the Grecian mould.

The Turk is moved by few passions, and those few carry him straight to their object. If he is revengeful, he takes the life of his enemy; if covetous, he seizes the property of those weaker than himself.

He has no conception of the perpetual bustle of life in western countries; he wonders at and despises activity. His life is simple, tranquil, and even dull. His greatest pleasure seems to be to recline in the shade from sunrise to sunset, occasionally sipping coffee and inhaling the fumes of tobacco. He converses but little, and his mind is, apparently, as indolent as his body.

It is very doubtful if such dispositions and habits promote the happiness of the individual; but most certainly they are not favourable to the progress of a nation. Of this there is ample proof in the present condition of a country which, while possessing almost every natural advantage, is, industrially, socially, and politically, the most backward in Europe. As a nation, indeed, but for the jealous guardianship of its more powerful neighbours, Turkey would long ere this have ceased to exist.

The busy stir of commerce, the self-denying ardour of science, the slow advance of patient industry, a widespread desire of enlightenment, and extension of public liberty, are the wheels upon which the great machine of

civilization moves forward; but these are all unknown to or despised by the Turk.

Constantinople, the capital, stands, like ancient Rome, on seven hills, and occupies one of the finest sites in the world. Stamboul, the oldest and most important part of the city, may be termed Constantinople proper. It is inhabited by the Turks, and contains the chief mosques, public offices and bazárs.

Galata is practically the sea-port of Stamboul: there we find dirty shops for ships' stores, merchants' offices, and noisy sailors. Pera is allotted to foreigners, and contains the palaces of ambassadors, the hotels, European shops, and the most motley population under the sun.

Scutari is in Asia, and is to Stamboul what Malabar Hill is to Bombay. It is chiefly important as being the starting point for all caravans going inland.

A thousand ships lie at anchor in the noble harbour of the Bosphorus, and light, gilded boats dart in all directions amid the tame sea birds that ride upon the clear rippling surface.

From India and England, from remote America, from the wild regions of Central Asia and Africa, from Cadiz, Marseilles, and all along the glowing shores of the Mediterranean, goods have been brought to tempt the purchasers in the calm, subdued light of the bazárs of Stamboul.

SUMMARY.—Turkey consists of a plain in the north, and a rugged mountain region in the centre and south. Its climate and soil are all that can be desired, still the country is in a most backward condition. Owing to the insecurity of property and the indolence of the inhabitants, agriculture, manufactures, trade and commerce are greatly neglected. The Turks are a fine race of men, but possess none of the energy and activity exhibited by the inhabitants of northern Europe. Constantinople, the capital, is beautifully situated on the Bosphorus.

QUESTIONS.—Describe the physical appearance of Turkey. Give some account of its climate and soil. Name some of its productions. Why is it in such a backward condition? In what respects do the Turks differ from other Europeans? Name the central points of interest and importance.

CONSTANTINOPLE.

- Intrigue** [Fr., *intriguer*, to puzzle, perplex—L., *intrico*, I entangle, perplex, embarrass—in, and *tricoor*, I make or start difficulties; I trifle, dally, play tricks—*trice*, hindrances, vexations], *n.*, a private or party scheme or plot.
- Elaborately** [L., *e*, and *laboro* (*laboratus*), I labour—*labor*, labour], *adv.*, with great labour or study; with nice regard to exactness.
- Tribunal** [L., *tribunal*—*tri-* *bunus*, the chief officer of a tribe—*tribus*, a tribe], *n.*, a raised platform on which the tribune sat; the bench on which a judge and his associates sit to administer justice; a court of justice.
- Momentous** [L., *momentum*, *contr.* from *momentum*, a balancing or oscillating motion; a balance, equipoise; a short-time, brief space, moment—*moveo*, I move), *adj.*, of moment or importance; of great consequence.

Even if we don't take a part in the chant about "Mosques and Minarets," we can still yield praises to Stamboul. We can chant about the harbour; we can say and sing that nowhere else does the sea come so home to a city: there are no pebbly shores, no sand bars, no slimy river-beds, no black canals, no locks nor docks to divide the very heart of the place from the deep waters.

If, being in the noisiest mart of Stamboul, you would stroll to the quiet side of the way amidst those cypresses opposite, you will cross the fathomless Bosphorus; if you would go from your hotel to the bazars, you must pass by the bright blue pathway of the Golden Horn¹ that can carry a thousand sail of the line. Venice strains out from the steadfast land, and in old times would send forth the chief of the state to woo and wed the reluctant sea; but the stormy bride of the doge is the bowing slave of the sultan: she comes to his feet with the treasures of the world; she bears him from palace to palace; by some unfailing witchcraft she entices the breezes to follow her and fan the pale cheek of her lord; she lifts

¹ *Golden Horn*, the harbour of Constantinople.

his armed navies to the very gates of his garden; she watches the walls of his seraglio;¹ she stifles the intrigues of his ministers; she quiets the scandal of his court; she extinguishes his rivals, and hushes his naughty wives all one by one. So vast are the wonders of the deep!

All the while that I stayed at Constantinople the plague was prevailing, but not with any violence; its presence, however, lent a mysterious and exciting, though not very pleasant, interest to my first knowledge of a great Oriental city; it gave tone and colour to all I saw and all I felt—a tone and a colour sombre enough, but true, and well befitting the dreary monuments of past power and splendour. With all that is most truly Oriental in its character the plague is associated: it dwells with the faithful in the holiest quarters of the city. The coats and the hats of Pera are held to be nearly as innocent of infection as they are ugly in shape and fashion; but the rich furs and the costly shawls, the brodered slippers and the gold-laden saddle cloths, the fragrance of burning aloes and the rich aroma of patchouli—these are the signs that mark the familiar home of plague.

You go out from queenly London, the centre of the greatest and strongest amongst all earthly dominions—you go out thence, and travel on to the capital of an Eastern prince: you find but a waning power, and a faded splendour, that inclines you to laugh and mock; but let the Angel of Plague be at hand, and he, more mighty than armies, can restore such pomp and majesty to the weakness of the imperial city, that if, *when he is there*, you must still go prying amongst the shades of this dead empire, at least you will tread the path with seemly reverence and awe.

The Osmanlees speak well. In countries civilized ac-

¹ *Seraglio* (pron. ser-al-yo), the palace of the Sultan, including the Government offices and the harem.

cording to the European plan, the work of trying to persuade tribunals is almost all performed by a set of men who seldom do anything else; but in Turkey, this division of labour has never taken place, and every man is his own advocate. The importance of the rhetorical art is immense, for a bad speech may endanger the property of the speaker and the free enjoyment of his throat.

Most of the Turks have a lawyer-like habit of speaking connectedly and at length. Even the treaties continually going on at the bazaar for the buying and selling of the merest trifles are carried on by specifying rather than by mere colloquies, and the continual uncertainty as to the market value of things in constant sale gives room enough for discussion. The seller is for ever demanding a price immensely beyond that for which he sells at last, and so occasions unspeakable disgust in many Englishmen, who cannot see why an honest dealer should ask more for his goods than he will really take; the truth is, however, that an ordinary tradesman of Constantinople has no other way of finding out the fair market value of his property. His difficulty is easily shown by comparing the mechanism of the commercial system in Turkey with that of the English.

In England, or in any other great mercantile country, the bulk of the things bought and sold goes through the hands of a wholesale dealer, and it is he who higgles and bargains with an entire nation of purchasers, by entering into treaty with retail sellers. The labour of making a few large contracts is sufficient to give a clue for finding the fair market value of the goods sold throughout the country.

But in Turkey, from the primitive habits of the people, and partly from the absence of great capital and great credit, the importing merchant, the warehouseman, the wholesale dealer, the retail dealer, and the shopman, are all one person. Old Moostapha, or Abdallah, or Hadji Mohamed waddles up from the water's edge with a small

packet of morchandise, which he has bought out of a Greek brigantine,¹ and when at last he has reached his nook in the bazar, he puts his goods *before* the counter, and himself *upon* it; then laying fire to his *tehibouque*,² he "sits in permanence," and patiently waits to obtain "the best price that can be got in an open market." He cannot know the intensity of the demand, or the abundance of the supply, otherwise than by the offers which may be made for his little bundle of goods: so he begins by asking a perfectly hopeless price, and then descends the ladder until he meets a purchaser.

This is the struggle which creates the continual occasion for debate. The salesman seeing that the unfolded merchandise has caught the eye of a possible purchaser commences his opening speech. He covers his bristling broadcloths and his meagre silks with the golden broidery of oriental praises; and as he talks, he lifts his undulating periods, and poises them well till they have gathered their weight and their strength, and then hurls them bodily forward, with grave momentous swing. The possible purchaser listens to the whole speech with deep and serious attention; but when it is over, his turn arrives. He elaborately endeavours to show why he ought not to buy the things at a price twenty times larger than their value; bystanders attracted to the debate, take a part in it as independent members—the vendor is heard in reply, and coming down with his price, furnishes the materials for a new debate.

Sometimes, however, the dealer, if he is a very pious Mussulman, and sufficiently rich to hold back his ware, will take a more dignified part, maintaining a kind of judicial gravity, and receiving the applicants who come to his stall, as if they were rather suitors than customers. He will quietly hear to the end some long speech that

¹ *Brigantine*, vessel without a deck. [A "brig" has two square-rigged masts.]

² *Tehibouque*, a kind of tobacco-pipe.

concludes with an offer, and will answer it all with that bold monosyllable "Yok," which means distastefully "No."

I caught one glimpse of the old heathen world. My habits of studying military subjects had been hardening my heart against poetry. For ever staring at the flames of battle, I had blinded myself to the lesser and finer lights that are shed from the imaginations of men. In my reading at this time, I delighted to follow from out of Arabian sands the feet of the armed believers, and to stand in the broad manifest storm-track of Tartar devastation; and thus, though surrounded at Constantinople by scenes of much interest to the "classical scholar," I had cast aside their associations like an old Greek grammar, and turned my face to the "shining Orient," forgetful of old Greece, and all the pure wealth she left to this matter-of-fact ridden world.

But it happened to me one day to mount the high grounds overhanging the streets of Pera. I sated my eyes with the pomps of the city, and its crowded waters, and then I looked over where Scutari lay half veiled in her mournful cypresses. I looked yet farther and higher, and saw in the heavens a silvery cloud that stood fast and still against the breeze: it was pure and dazzling white as might be the veil of Cytherea,¹ yet touched with such fire as though from beneath the loving eyes of an immortal were shining through and through. I knew the bearing, but had enormously misjudged its distance, and now it was that I saw and acknowledged the snowy crown of the Mysian Olympus!²

Eöthen.

—o—

¹ *Cytherea* (or—*æ*), a surname of Venus, from Cythra (Cerigo) where she was chiefly worshipped.

² *Mysian Olympus*, the highest point of the Mysian range, Bithynia—not the Olympus of Greek mythology.

CAIRO.

Bazaar [Pers., a market], *n.*,
an Eastern market place.

Aperture [L., *aperia* (*apertus*),
I uncover; lay bare; open;
unclose], *n.*, an opening; a
hole.

Decrepit [Fr., *decrepit*, from
L., *decrepitus*, broken down;
worn out; very old; decrepit
—*de*, and *crepo*, I rattle;
crack; creak; cause to
sound], *adj.*, wasted by the
infirmities of old age; being
in the last stage of decay.

Arabesque [Fr., *arabesque*],
adj., in the manner of the
Arabians; a term applied to
sculptured and painted orna-
ments consisting of imagin-
ary foliage, stalks, plants,
etc., but in which there are
no figures of men or animals,
representations of these be-
ing forbidden by the Koran.

Motley [Old E., *smattered*, bo-
daubed; W., *ymot*, a spot;
ymotio, to mottle], *adj.*,

covered with spots of different
colours; consisting of various
colours; variegated; dap-
pled; diversified.

Miscellaneous [L., *miscel-
laneus*, mixed — *miscellus*,
mixed — *misceo*, I mix; min-
gle; blend], *adj.*, mixed or
mingled; consisting of sev-
eral kinds.

Stereotyped [Gr., *stereos*,
hard; solid; and *typos* (L.,
typus), a blow; the mark of
a blow, as the impress on a
seal or coin; figures or im-
pressions wrought in metal
or stone; hence, a figure,
image, or statue — *typto*, I
beat; strike], *pa. p.*, and
adj., fixed; conventional;
regularly employed. A Ste-
reotype is a solid metallic
plate for printing, cast from
an impression of movable
types in plaster of Paris or
papier maché.

To-night I am steeped in the dreaminess of Oriental
romance, lounging arm-in-arm with the spirits of de-
parted sultans, grand viziers, with the bright rays of an
Egyptian moon lighting up mosque, palace, bazár, and
fountain, and lending an additional grandeur to the out-
line of the silent pyramids.

The night is one of most enchanting loveliness. Not
one restless breath of balmy atmosphere is found to stir
the feathery leaves of palms, or move a ripple on the
moonlit lake. Insects on leaf, and flower, and shrub, are
busy in the coolness of the night, and give forth cheerful
sounds. Fountains, on many a marble terrace or flower-
girt walk, send forth their cooling streams, whose rip-

pling music lul. restless sleepers with silvery notes. A fairy spell seems hanging on the city, whose teeming thousands might have been changed, by some sorcerer's magic, into dead blocks of marble; so still, and hushed, and motionless is the city of the Egyptian sultans!

I am moving through one of the principal open squares of Cairo alone, and regardless of cautions about Nubian bravos, I here behold beetling heavy doorways and sombre wickets, barely made visible amidst the darkness by the sickly twinkling of the baby lanterns. The walls are thick, the gates are massive, the bolts and locks are of colossal magnitude, and carry on their rusty iron visages the features of dark tales and strange adventures.

There is a noble mosque, with its stately gilded minarets towering above the walls and gates below, and radiant with the brightness of the hour. Farther on is a goodly building of polished marble. The moonbeams falling thickly on it, show how much time and skill the craftsmen of old Egypt have lavished on its form. It is a public fountain, where the halt and blind may rest and quench their thirst. Beyond it, again, adjoining a long low range of wall and peering gables, are a suite of baths of many-coloured marble—beautifully moulded by the carver's chisel, yet of less pretension than the fountain, as a work of art. It stands forth grandly from the crowd of strange fantastic dwellings that cluster round about it.

There is a noble mansion of the Arabian Nights' description; massive, large, full of quaint doors and sly windows, doing their best to see, yet not to be seen. It is shaded by lofty palms, whilst over the thick wall of the garden and terrace may be seen the bright flowers and verdant leaves of the pomegranate and citron. The principal gateway is slightly ajar, and I venture to indulge my curiosity by peeping slyly in through the narrow aperture left by the unclosed door. There are many lights inside,—lanterns, torches, and flambeaux,

and by their combined light I obtain an uncertain vision of a busy multitude within a hall shut off from the courtyard by trellis-work and windows.

There is a sound of revelry within: of merry voices, of stringed instruments, of dancing feet. They are evidently the domestic part of some establishment of quality, making holiday to celebrate some family event. Who can say but it may be the wedding-night of some vizier's daughter or son?

The first living creature I have encountered this night is an old decrepit man on a donkey. Muffled in ample folds of muslin, it is difficult to say, save by his stooping form, whether he be aged or young. He starts at meeting me at that unusual hour, but goes on his solitary way with the usual Moslem salutation, "God is great, and Mahomet is His prophet!" The voice dies away in the silent distance; and I wend my weary way to the hotel by the grotesque principal square, to rest till daylight, and dream of caliphs, viziers, genii, hunchbacks, cadis, Ethiopians, and cheese-cakes.

It is mid-day, that is to say, early in the forenoon by the hour, though high-noon judging from the intensity of the sun's rays. I am equipped once more for a visit of Oriental research amidst the stone and wood and dust of Grand Cairo; and, forcing my hasty way through a regiment of bearded dragomen that are fain to make common property of me, I rush down the wide stairs into the courtyard, climbing upon the nearest of nine saddled donkeys that cut off all egress from the hotel. I give the creature the full length of the reins, with licence to bear me whither he wills. The animal is evidently quite up to the tastes of overland travellers, and trots away with me at a cheerful pace, towards and into the very busiest and narrowest thoroughfares.

I am now in the very heart of busy Cairo, with its many pulses beating quick and high about me. I am where I have for long years sighed to be, and whither

in my dreams I have often wandered in imagination. But Cairo by moonlight and Cairo by sunlight—hot, glaring, suffocating high-noon—are, in appearance, two very different places. The arabesque windows, the latticed portals, the high gables, the giant palms, the carved fountains that, by the pale light of the moon, appeared so richly picturesque, so quaint, are now broken, deformed, and thickly coated with dust.

The mosques are very much out of repair. The bazárs are fast falling to decay—I should say they are not let on repairing leases. The baths appear to stand in need of frequent purifying dips themselves. The motley crowd of merchants, devotees, ^{Copts} ^{Turks}, Arabs, eunuchs, buyers, and loungers are, on the whole, exceedingly doubtful about the skin and garments; and I cannot avoid feeling a strong conviction that a free application of whitewash and soap would greatly improve the appearance of the Cairo community and their tenements.

I could rein in my ambling donkey in the midst of this most picturesque street, and spend a good hour in an examination of the passers-by, of the shops, their owners, and their frequenters. Why, that sherbet shop at the corner of the narrow passage, with the Italian name over the doorway, the many-coulored bottles in the windows, and the many-vestured gossipers within, seated on divans, couches, and easy-chairs, drinking and listening to some nice story or touching scandal, is alone a fertile study for a lover of the novel and the picturesque.

Of all the places of public resort in Cairo, excepting only the mosques, the Turkish bazár is the most especially Oriental, and strikingly picturesque. Of great extent, it is divided into many different departments, in each of which goods and wares of a particular class are exposed for sale. In one or two lanes of shops there are

¹ *Copts*, the descendants of the ancient Egyptians. They are Christians.

only boots and slippers to be seen. Farther on, mats, pillows, and cushions, are the articles to be disposed of. In another quarter, clothes of every description are heaped up and stored in lofty piles. In another, jewellery and ornaments in utmost variety; farther on, quaint copper and iron vessels; and yet farther still, are the shops devoted to miscellaneous merchandise.

I know not which to admire most—the curious style and fashion of the shops, the strange varieties of their contents, the picturesque garb of the many dealers, or their Oriental gravity and seeming indifference to all worldly matters about them. There is a bearded old gentleman seated in great dignity on a soft ottoman, cross-legged, like a European tailor. He is a noble-looking merchant of fancy articles, tastefully clad in ample robes, with a hookah of extensive dimensions in his mouth.

Slipping from my saddle, and flinging the reins to the young Egyptian urchin who has charge of my donkey, I make my way to the solemn Turk, and, saluting him, I proceed to examine and admire his merchandise. An Oriental, whether in Egypt or Bengal, will never allow himself to be surprised at anything, nor to evince any of the most ordinary emotion. Accordingly, I do not look for any outward and visible signs of pleasure, or even of attention, from the cushioned, turbaned Mahometan. If he is looking at me at all—and I feel extremely doubtful on the point—it must be, my shoes that are occupying his attention; for his eyes are bent most provokingly downward, calmly and immovably. I roam over his long array of articles, from the richer silk purses of Persia, and the embroidered slippers from Morocco, to the fine steel-work of Damascus, glistening in the sunlight like Elkington's best electro-plated wares. I nod my head and smile in approval of the goods; and, as a reward for my Frankish friendliness, the Turk lifts up his deep dark eyes, mutters something in soft Arabic, and motions gracefully to an attendant in the rear.

In a moment a tiny cup of smoking black coffee is handed to me on a rich silver. I am too well versed in Oriental customs to decline the civility; besides which, I am anxious to ascertain if Moscha coffee, so near the place of its production, is the delicious beverage it is said to be. Rumour has, in this instance, been a faithful chronicler; the coffee is of an exquisite aroma, though I confess my degenerate tastes desire a flavour of milk with it.

Pleased with my ready acceptance of his coffee, and flattered by my signs of approval, he hands me a richly-jewelled snuff-box, of which I ~~delight myself~~ myself, though detesting snuff, and go off forthwith into a paroxysm of sneezes. Lastly, the mouth of his own particular hookah is handed to me.

I wish to depart, and look around me for some memento of the time and place. A purse, worked in silver lace on a rich silk velvet ground, takes my attention. Whilst selecting this, my new acquaintance brings forward, wrapped in many careful folds of soft cloth, a box of curious workmanship and rarer materials. Gold and silver, ivory, pearls and precious stones, combine in its construction, and almost dazzle the eye with their brilliancy. It is a gem worthy the acceptance of princes. The world-famed Koh-i-noor might condescend to repose within its sparkling embrace. Cleopatra might have kept her love-letters in it. Alexander the Great could have condescended to call it his. The cost of it, I am assured through an interpreter, is a mere trifle for an English "lord" to give; only a few hundreds of pounds sterling. But, as I have a tolerably vivid idea that my spare hundreds will flow in a more westerly and practical direction, I descend to the purchase of an African purse, much to the disappointment of the Turkish merchant, who, however, does not condescend to evince the slightest emotion, even of contempt. I pocket my purse, and depart, laden with the ordinary stereotyped "Bismillahs," "In the name of the Prophet," etc., losing myself

for another hour amongst the strange intricacies of
rickety bazars, dusty haps, and inviolated mosques.

Household Words.

THE WOUNDED SINGING BIRD.

Poor singer! hark the Fowler's gun,
Or the sharp winter done thee harm?
We'll lay thee gently in the sun,
And breathe on thee and keep thee warm!
Perhaps some kinder kindness still
May prove a cure for human ill.

We'll take thee in, and nurse thee well,
And save thee from the winter wild,
Till summer fall, and fall, and fall,
And thou shalt be our feathered child;
And tell us all thy pain and wrong,
When thou canst speak again in song.

Fear not, nor tremble, little bird,
We'll use thee kindly now;
And sure there's in a friendly word
An accent even thou shouldst know:
For kindness which the heart doth teach
Disdaineth all peculiar speech.

'Tis common to the bird and brute,
To fallen man, to angel bright;
And sweeter 'tis than lonely lute
Heard in the air at night:
Diverse and universal tongue,
Whether by bird or spirit sung.

But hark! is that a sound we hear
Come chirping from its throat;
Faint, short—but weak—and very clear,
And like a little grateful note?

Another? Ha! look where it lies,—
It shivers,—gasps,—is still,—it dies!

'Tis dead! 'tis dead, and all our care
Is vain. Now in vain,
The another's woe doth pierce the air,
Calling her nestling bird again.

All's vain; the singer's heart is cold,
Its eye is dim,—its fortune told!

Proctor.

AFRICA.

Noxious, hurtful.

Sable, black.

Colossal, huge, gigantic.

Oasis, a fertile spot.

Simoon, a prevailing poison-

ous wind.

Explored, stretched out, ex-

tended.

THIS continent, which is about three times the size of Europe, is surrounded on all sides by the ocean, except where the Isthmus of Suez connects it with Asia; now, however, practically separated by the Suez Canal.

Speaking generally, Africa consists of a belt of low, unhealthy, but highly productive land along the coast, from which the country rises by a series of terraces to the interior, of which comparatively little is known.

The northern part is occupied by the Barbary States, which skirt the Mediterranean, and are bounded on the south by the Atlas Mountains; beyond those lies an immense desert, called the Sahara; this is succeeded by the fertile and populous district of Soudan or Negro-land. The remaining part of central Africa seems to be a vast table-land, with a depression in its centre occupied by a chain of large lakes.

Compared with the other continents, Africa has the most unbroken coast line; the fewest peninsulas, inland seas, islands, and rivers; the largest deserts; the hottest climate; and the most barbarous and uncivilized inhabitants. It has no large inland seas like the Mediterranean or Baltic, and no mountains to compare with the Andes or Himalah ranges. Excepting the Nile, the Niger, the Camero, the Orange, and the Zambezi, its rivers are comparatively few and insignificant; and Madagascar is the only important island on its coast.

Perhaps the most striking physical feature of Africa is the great desert of Sahara, which includes more than a fifth of the whole continent. The greater portion of this

vast space is a mass of bare, low, rocky hills, and scorching sands, without water, bird, or tree, and with only the scantiest vegetation. To the traveller it presents little more than a boundless expanse of sand and sky, a gloomy and barren track, where his eye finds nothing to rest upon, as he wends his weary way across its boundless wastes.

Here and there, however, are to be found fertile spots, —green oases in the desert— which contain wells of good water, and groves of waving palm-trees. These serve as resting places for the caravans on their toilsome march. Here the traveller can quench his parching thirst, and find shelter from the burning rays of a scorching sun. But woe to the poor wayfarer, if, as frequently happens, the wells have become dry!

Death from thirst, however, is by no means the only danger to which travellers are exposed in this dreary region. Sometimes they are overtaken by the burning *simoom*, which, advancing like a hurricane, buries them beneath the drifting sands, that rush before the wind like the waves of the sea.

Of the vast regions of Central Africa, lying to the south of the great desert, our knowledge is only limited and imperfect. Within the last few years Barth, Livingstone, Burton, Spoke, Baker, and Du Chaillu, have given us more information respecting this district than all previous writers put together; still, but a comparatively small portion has been explored, and the great mass of the inhabitants are strangers to a white man's face.

All that we do know tends to produce amazement. We find a land of most luxurious vegetation, abundantly watered; a land of vast forests, whose magnificent trees furnish choice woods; a land where the pine-apple is a weed, where rice grows wild, ground nuts abound, and tobacco, maize, and cotton might be grown to any extent. Elephants, with their precious ivory tusks, roam in hords, and there are antelopes of all sizes, and of species innumerable. There is indeed a profusion of animal and

vegetable life; but, in spite of all this, the inhabitants are poor. They do not till the ground, and they do not rear cattle. They eat what comes to hand—elephant, hippopotamus, rat, mouse, dog, frog, slug—and, when other food fails, certain tribes resort to cannibalism.

Central Africa is a land without history, without a literature, almost without traditions. There are no buildings either for use or ornament in the present, and no ruins to mark the past; there are no roads, no bridges, no canals. The civilization with which the natives have come in contact has only served to further demoralize them by the combined evils of spirituous liquors and the slave-trade.

The distinguishing features of African climate are heat and dryness, a consequence of its being situated almost entirely in the tropics. In Egypt, Nubia, and the Sahara, rain seldom or never falls, while in the remaining part of the continent, except the extreme north and south, there are only two seasons—the wet and the dry. During the wet season it rains in torrents for weeks together, and the country is flooded by the overflowing rivers. To this succeeds the dry season, when all but the largest rivers become empty channels, and vegetation is burnt up by the excessive and long-continued heat. For eight months of the year, constant fine weather is prevalent throughout the greater part of the continent. The sun rises every morning in a clear atmosphere, spreading a glaring light over the whole country; and in the evening, the orb of day sinks magnificently into the ocean; no cloud casts a passing shadow over the brilliant landscape, or distils in soft showers on the thirsty land.

Animals in the greatest abundance and of endless variety are the characteristic production of Africa. The elephant, hippopotamus, rhinoceros, zebra, and giraffe; the gorilla, chimpanzee, mandril, and other baboons and monkeys; the lion, the panther, and the leopard; spring-boks, antelopes, and buffaloes—these are merely examples

of the animals which roam over the woods and plains of this continent.

The ostrich inhabits the sandy deserts; lizards, serpents, and noxious reptiles of almost every species abound in all parts, while the large rivers swarm with crocodiles. The great scourge of the country is ants and locusts; the former march in incredible numbers, eating up every animal and vegetable substance that comes in their way; the latter are equally destructive, and spread themselves over extensive districts. When flying, their numbers are often so great as to hide the sun like a dark cloud; and when they alight, every green thing disappears as if by magic.

Except in the Barbary States, the Nile region, and the Cape Settlements, the people of Africa are for the most part negroes, with whose sable skins, thick lips, flat noses, and woolley heads, so unlike European, we are all familiar. They are broken up into numerous petty tribes, which are for ever at war with each other. Their towns and villages are mere groups of huts, and their agriculture is of the rudest description. Many of them, subsisting wholly on the produce of the chase, often endure great privations, and are steeped in the grossest ignorance and barbarism.

For a variety of reasons, Egypt is the most interesting part of the African continent. Lying on the high-road to the East, it is frequently visited by Englishmen on their way to or from our Indian Empire; and now that the Suez Canal unites the Mediterranean and Red Seas, the greater part of the traffic with the East Indies will probably pass through that channel.

It is from an historical point of view, however, that this country is chiefly remarkable. Ages before the empires of Greece and Rome had been founded, a highly cultivated and powerful kingdom had grown up on the banks of the Nile; and though it is now thousands of years since its glory departed, the colossal ruins of its cities, temples, and pyramids—wonderful for their vast size and

massive architecture—bear ample testimony to its ancient greatness.

SUMMARY.—Africa consists of a belt of low, unhealthy land along the coast, from which a series of terraces leads to the interior, respecting which we know comparatively little. The desert of Sahara occupies more than one-fifth of the whole continent. Only a comparatively small portion of Central Africa has as yet been explored by Europeans. The climate is distinguished for its heat and dryness, consequently animal rather than vegetable life forms its characteristic production. Among its wild quadrupeds are the elephant, rhinoceros, hippopotamus, and giraffe; while the gorilla, chimpanzee, and other quadrupeds are equally abundant. Many of the negro tribes are steeped in the grossest ignorance and barbarism. Egypt, both from its position and historical associations, is the most interesting part of the African continent. It is chiefly remarkable for the colossal ruins of its temples and pyramids, which bear testimony to its ancient greatness and advanced civilization.

QUESTIONS—What is the general feature of Africa? Describe its climate. Enumerate the most important animals. Name the chief rivers and settled districts. Name the remarkable features of Egypt.

THE SWORD.

'Twas the battle-field, and the cold, pale moon
Looked down on the dead and the dying;
And the wind passed o'er with a dirge and a wail,
Where the young and the brave were lying.

With his father's sword in his red right hand,
And the hostile dead around him,
Lay a youthful chief; his bed was the ground,
And the grave's icy sleep had bound him.

A reckless rover, mid death and doom,
Passed a soldier, his plunder seeking;
Careless he stopped where friend and foe
Lay alike in their life-blood reeking.

Drawn by the glare of the warrior's sword,
The soldier paused beside it ;
He wrenched the hand with a giant's strength,
But the grasp of the dead defied it.

He loosed his hold, and his noble heart
Took part with the dead before him ;
And he honoured the brave who died sword in hand,
As with softened brow he bent o'er him.

" A soldier's death thou hast boldly died,
A soldier's grave won by it ;
Before I would take that sword from thy hand,
My own life's-blood should dye it.

" Thou shalt not be left for the carrion crow,
Or the wolf to fatten o'er thee ;
Or the coward insult the gallant dead,
Who in life had trembled before thee ! "

Then dug he a grave in the crimson earth,
Where his warrior foe was sleeping ;
And he laid him there in honour and rest,
With his sword in his own brave keeping.

L. E. Landon.



THE FLIGHT OF XERXES.

I saw him on the battle-eve,
When like a king he bore him—
Proud hosts were there in helm and greave,
And prouder chiefs before him :
The warrior, and the warrior's deeds—
The morrow, and the morrow's needs—
No daunting thought came o'er him ;
He looked around him, and his eye
Defiance flashed to earth and sky !

He looked on ocean—its broad breast
Was covered with his fleet ;
On earth—and saw, from east to west,
His bannered millions meet ;
While rock, and glen, and cave, and coast,
Shook with the war-cry of that host,
'The thunder of their feet !
He heard the imperial echoes ring—
He heard—and felt himself a king !

I saw him next alone—nor camp
Nor chief his steps attended ;
Nor banner blazed, nor courser's tramp
With war-cries proudly blended.
He stood alone, whom fortune high
So lately seemed to deify ;
He who with Heaven contended
Fled, like a fugitive and slave !
Behind—the foe ; before—the wave !

He stood ;—fleet, army, treasure, gone—
Alone, and in despair !
While wave and wind swept ruthless on,
For *they* were monarchs there ;
And Xerxes in a single bark,
Where late his thousand ships were dark,
Must all their fury dare ;
What a revenge—a trophy, this,
For the immortal Salamis !

Miss Jewsbury.

THE DESERT.

Stipulated [*L.*, *stipular* (*stipulatus*), I promise, engage, pledge myself—prob. from *stips*, a gift, donation, contribution in small coin], *pa. p.* and *pp.*, *ht.*, bargained for, a stipend, or for money; contracted.

Tethered [*Jow Dutch*, *ader*, tier; *Gael.*, *tead*, tether, rope, reins; *teadhair*, to tether], *pa. p.*, tied or confined with a leather rope, or chain.

Oratory [*L.*, *orator*, a speaker, orator; one who prays or beseeches — *oro*, I speak, pray, beg, entreat], *n*, an apartment or building for private worship.

The manner of my daily march was this. At about an hour before dawn, I rose, and made the most of about a pint of water which I allowed myself for washing. Then I breakfasted upon tea and bread. As soon as the beasts were loaded, I mounted my camel and pressed forward. My poor Arabs being on foot would sometimes moan with fatigue and pray for rest; but I was anxious to enable them to perform their contract for bringing me to Cairo within the stipulated time, and I did not therefore allow a halt until the evening came. About mid-day, or soon after, Mysseri used to bring up his camel alongside of mine and supply me with a piece of the dried bread softened in water, and also (as long as it lasted) with a piece of the tongue. After this there came into my hand (how well I remember it!) the little tin cup half-filled with wine and water.

As long as you are journeying in the interior of the desert you have no particular point to make for as your resting-place. The endless sands yield nothing but small stunted shrubs; even these fail after the first two or three days, and from that time you pass over broad plains—you pass over newly-reared hills—you pass through valleys dug out by the last week's storm, and the hills and the valleys are sand, sand, sand, still sand, and only sand, and sand, and sand again. The earth is

so monotonous, that your eyes turn towards the heavens for the sake of variety.

You look to the sun, for he is your task-master, and by him you know the measure of the work that you have done, and the measure of the work that remains for you to do. He comes when you strike your tent in the early morning, and then, for the first hour of the day, as you move forward on your camel, he stands at your near side, and makes you know that the whole day yet is before you; then for a while, and a long while, you see him no more, for you are veiled and shrouded, and dare not look upon the greatness of his glory, but you know where he strides over head, by the touch of his flaming sword. No words are spoken, but your Arabs moan, your camels sigh, your skin glows, your shoulders ache, and for sights you see the pattern and web of the silk that veils your eyes, and the glare of the outward light.

Time labours on—your skin glows, your shoulders ache, your Arabs moan, your camels sigh, and you see the same pattern in the silk, and the same glare of light beyond; but conquering time marches on, and by-and-by the descending sun has compassed the heaven, and now softly touches your right arm, and throws your lank shadow over the sand right along on the way for Persia. Then again you look upon his face, for his power is all veiled in his beauty, and the redness of flames has become the redness of roses; the fair, wary cloud that fled in the morning now comes to his sight once more—comes blushing, yet still comes on—comes burning with blushes, yet comes and clings to his side.

Then begins your season of rest. The world about you is all your own, and there, where you will, you pitch your solitary tent; there is no living thing to dispute your choice. When at last the spot had been fixed upon and we had come to a halt, one of the Arabs would touch the chest of my camel, and utter at the same time a peculiar gurgling sound. The beast instantly understood and obeyed the sign, and slowly sunk under me,

till she brought her body to a level with the ground: then gladly enough I alighted. The rest of the camels were unloaded and turned loose to browse upon the shrubs of the desert, where shrubs there were, or, where these failed, to wait for the small quantity of food that was allowed them out of our stores.

My servants, helped by the Arabs, busied themselves in pitching the tent, and kindling the fire. Whilst this was doing, I used to walk away towards the East confiding in the print of my foot as a guide for my return. Apart from the cheering voices of my attendants I could better know and feel the loneliness of the desert. The influence of such scenes, however, was not of a softening kind, but filled me rather with a sort of childish exultation in the self-sufficiency which enabled me to stand thus alone in the wideness of space—a short-lived pride, for wherever man wanders, he still remains tethered by the chain that links him to his kind; and so when the night closed round me, I began to return—to return as it were to my own gate.

Reaching at last some high ground, I could see, and see with delight, the fire of our small encampment; and when, at last, I regained the spot, it seemed a very home that had sprung up for me in the midst of these solitudes. My Arabs were busy with their bread,—Mysseri rattling tea-cups,—the little kettle, with her odd oldmaidish looks, sat humming away old songs about England, and two or three yards from the fire my tent stood prim and tight with open portal, and with welcoming look—a look like “the own arm chair” of our Lyrist’s “sweet Lady Anne.”

Sometimes in the earlier part of my journey the night breeze blew coldly; when that happened, the dry sand was heaped up outside round the skirts of the tent, and so, the wind that everywhere else could sweep as he listed along those dreary plains, was forced to turn aside in his course, and make way, as he ought, for the Englishman. Then within my tent there were heaps of luxuries,—dining-rooms, dressing-rooms, libraries, bed-

rooms, drawing-rooms, canteens, all crowded into the space of a hearthrug. The first night, I remember, with my books and maps about me, I wanted a light. They brought me a taper, and immediately from out of the silent desert there rushed in a flood of life, unseen before. Monsters of moths of all shapes and hues that never before perhaps had looked upon the shining of a flame, now madly thronged into my tent, and dashed through the fire of the candle till they fairly extinguished it with their burning limbs. Those who had failed in attaining this martyrdom suddenly became sycophants, and clung despondingly to the canvas.

By-and-by there was brought to me the fragrant tea, and big masses of scorched and scorching toast, and the butter that had come all the way to me in this Desert of Asia, from out of that poor, dear, starving Ireland. I feasted like a king—like four kings—like a boy in the fourth form.

When the cold, sullen morning dawned, and my people began to load the camels, I always felt loth to give back to the waste this little spot of ground that had glowed for a while with the cheerfulness of a human dwelling. One by one the cloaks, the saddles, the baggage, the hundred things that strewed the ground and made it look so familiar—all these were taken away, and laid upon the camels. A speck in the broad tracts of Asia remained still impressed with the mark of patent portmanteaus and the heels of London boots; the embers of the fire lay black and cold upon the sand: and these were the signs we left.

My tent was spared to the last, but when all else was ready for the start, then came its fall; the pegs were drawn, the canvas shivered, and in less than a minute there was nothing that remained of my genial home but only a pole and a bundle. The encroaching Englishman was off; and instant upon the fall of the canvas, like an owner who had waited and watched, the Genius of the Desert stalked in.

Bothen.

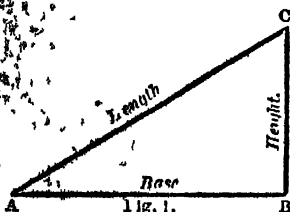
THE INCLINED PLANE.

Horizontal, on a level.
 Principle, guiding rule; reason.
 Mechanical, relating to machines;
 opposed to hand or head work.

Plane, a smooth surface.
 Percussion, striking, shock.
 Micrometer, measurer of
 minute distances.

An inclined plane is simply a flat surface placed in an oblique or slanting direction.

The following terms are used in speaking of the Inclined Plane:—the base or horizontal line, as A B (Fig. 1.); the height or perpendicular line, as B C; and the length, or Inclined Plane itself, as A C.



The Inclined Plane is one of the great mechanical powers. I say *great*, because, although there are usually reckoned six mechanical powers, these in reality may be reduced to the principle of two, viz, the *Lever*, and the *Inclined Plane*. The mechanical powers are generally arranged thus:—

The Lever.	} Principle of the Lever.
The Wheel and Axle.	
The Pulley.	
The Inclined Plane.	} Principle of the Inclined Plane.
The Wedge.	
The Screw.	

So then, you see that a proper knowledge of the Inclined Plane comprehends an account of the wedge and of the screw:—

I may remark, with reference to the list of mechanical powers, that some authors add the toothed wheel to the number, making seven powers.

In calculations respecting the Inclined Plane, the

surface is supposed to be perfectly smooth and hard, two conditions which are never met with in practice. The smooth hard rails of a railway incline give a good idea of a regular Inclined Plane.

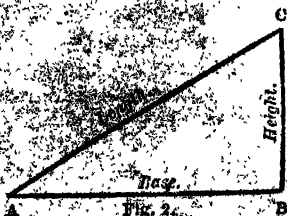
You are aware that the object of the mechanical powers is to gain some advantage in applying a force. The advantage generally sought for is an increase of power, or, that a certain power may by means of a machine produce a greater effect than it could do unaided. Sometimes, however, the object is to gain *time*, as was shown in speaking of the third kind of lever. But you must remember that this gain of power is never balanced by a loss of *speed*, which is of course a loss of *time*. It is impossible to gain both power and speed at the same time, by the aid of any mechanical power.

Now the advantage derived from the Inclined Plane is, that a weight may be pushed up the plane, and be thus raised a certain perpendicular height by a much less power than would be required to lift up the weight to the same height. For you may notice, that the plane itself bears part of the weight which is moved.

An exact idea of this is important. ABC is our Inclined Plane as before (Fig. 2). Then it has been shown by actual experiment, and can also be proved by calculation, that as many times as the length AC is greater than the height BC , exactly so many times is the weight supported greater than the power which supports it. We may express this more briefly, that you may learn it more easily, by saying that:—

The power is the same part, portion, or fraction of the weight, as the height of the plane is of its length.

Suppose the length AC to be three times the height BC , then a weight of 3 lbs. might be supported by a



power of 1 lb., and a little more exertion would pull the weight up the plane.

Again, suppose a weight of 10 lbs. be used to balance another weight resting on a plane, whose length is five times its height; it will become evident that a weight of 50 lbs. might be supported.

You must remember that this rule holds good in theory only; there are many drawbacks in actual practice. For instance, I may mention *friction*, or a resistance to motion, which all rough bodies are affected by, and this disturbing force of friction greatly interferes with our neat theoretical rules. And since all earthly bodies are more or less rough, friction always produces some effect.

Notice what an extremely simple machine this Inclined Plane is. Indeed, so simple is its construction, that it hardly seems correct to dignify it with the name of a *machine*. And yet, when studied, it is found fully to deserve that name, for by its aid we can economize power; i.e., we can make a certain force balance a much larger one.

We have not far to seek for well-known examples of this mechanical power. You have seen the stout short ladder by means of which draymen get their barrels off and on their wagons. You have noticed also the planks placed in an inclined position to get goods in and out of cellars. In excavations, the labourer wheels his loaded barrow up a sloping plank. All these are practical applications of an Inclined Plane.

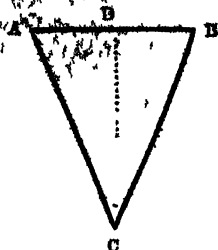
Railroads, too, on account of the slope of the land, frequently rise and fall in inclined planes. A railroad incline is termed a *gradient*. A gradient is generally measured by the number of feet which the plane rises within a certain distance. Thus, if one part of the rail be 1 ft. higher than another part 100 ft. off, the gradient is said to be 1 in 100. What would be the power required to prevent a load from running down on such a plane, supposing it to be perfectly smooth?

Clearly $\frac{1}{10}$ of the weight, that being the fraction that the height is of the length.

The Wedge now commands our attention.

An Inclined Plane used for cleaving or separating bodies is called a wedge. Frequently the wedge consists of two inclined planes, placed base to base. Any tapering body, however, may be used as a wedge. The wood-chopper uses a wedge to cleave asunder large stems of trees. Iron wedges, of a somewhat conical form, are effectively used in breaking up hard macadamized roads, when repairs are required.

Suppose the two sides AC, BC , of our wedge are equal, which is a common case: then the advantage of the wedge, on the supposition that it is acted on by a pressure on its top or back, AB , is the number of times that BC is greater than AB . If BC the side, be twice AB the back of the wedge, then the weight moved might be double the power applied.



This mode of employing the wedge, viz., by acting on it by pressure, is, however, but rarely used. The wedge is nearly always driven home by blows on its back AB . The effects of this percussion or striking, it is not easy to calculate. Enough to remember at present is, that the thinner the back of the wedge AB , the easier does it penetrate an object.

You would be surprised at the enormous amount of pressure required to force a nail into a piece of wood, compared with the small amount of percussion required. Again, you know how slight a tap will break the shell of an egg, yet by careful management you might place a weight of at least fourteen pounds on the end of the fragile shell, without injuring it in the slightest degree.

If a tumbler, which slightly tapers to its base, be

placed in another which allows it only partial entrance, the upper tumbler will act as a wedge, and a small force will cause it to split the lower one.

Wedges are very useful for tightening bodies. This they may do by still forcing asunder. Scaffold-poles for instance, are tied tightly together with cords, and small wedges are driven between the cords to distend them and so bind the poles closer together. Ships on the stocks are also wedged up.

Wedges are employed in daily life, under various names, and a student might find it worth his while to dispense with them. Nails, pins, needles, and even our teeth are fashioned on the principle of the wedge. The edges of tools, swords, scissors, etc., are equally indebted to this simple mechanical power. When you see the knife dividing a loaf of bread, remember it is acting as a very thin wedge.

Generally, to effect its object, the wedge moves. There is one instance, however, in which it is useful in a state of rest. This is when it acts as the key-stone of an arch.

The Screw is another modification of the inclined plane. Take a screw and examine it. You will find that it consists of a cylinder, having a projection passing round it in a spiral direction. This projection is called the *thread* or *worm* of the screw. Theoretically the screw is considered to be a cylinder with an inclined plane wrapped round it. You might cut out in paper a triangle with a right angle, and then wrap it round a ruler or pencil, and you would see the oblique side of the triangle tracing out a spiral path, which path indicates the thread of the screw.

The thread of screws varies in form. Sometimes it is square, sometimes triangular. Square threads are used for heavy work. The thread of the screw may be placed on the inside, instead of the outside of the cylinder. In the first case, the screw is termed a *hollow screw*.

When the screw is used as a mechanical power, it is almost invariably acted upon by a lever, which of course

multiplies the effect of the screw. The power is applied, as usual, at the extremity of this lever, and in driving home the screw the power arm naturally describes a circle. Now the mechanical advantage of the screw is this — As many times as the circumference of the circle described by the power arm is greater than the distance between the threads of the screw, so many times will the weight be greater than the power.

Hence the advantage derived from this machine may be augmented in two ways, either by diminishing the distance between the threads of the screw, or by lengthening the lever. The first plan has a limit, for if the thread of the screw be made too fine, it breaks, so that no powerful pressure can be applied. The second mode of increasing the advantage may be adopted, till the lever becomes inconveniently long.

The carpenter's bench and the blacksmith's vice are excellent examples of the usefulness of this machine. The bookbinder's press and the coming press are other well known instances. The copying press, so frequently seen in stationers' shops, has its screw-power augmented by the momentum or moving force of two heavy balls whirled rapidly round.

The screw can also be used for measuring very small distances. In this form, it is called the *micrometer screw*. So delicate are the indications of these micrometer screws, that such a small space as the one-five thousandth of an inch can be clearly noted.

SUMMARY—An inclined plane is a perfectly hard, smooth surface, placed obliquely.

There are two great mechanical principles—the lever and the inclined plane—the lever, wheel and axle, and pulley are referred to the first, and the inclined plane, wedge, and screw to the second of these principles.

Gain in power is counterbalanced by loss in speed.

Friction is a resistance to motion, occasioned by the rubbing together of rough bodies.

Examples of the inclined plane—A railroad gradient; planks and ladders, up or down which loads are passed obliquely.

The wedge is an inclined plane, used for separating. Wedges are chiefly acted on by the force of percussion, which is immensely more effective than pressure only. Examples of wedges:—Pins, needles, knives, chisels, etc.; blocks for tightening cords, the key-stone of an arch, etc. The screw is an inclined plane wrapped round a cylinder.

The carpenter's bench, the blacksmith's vice, the bookbinder's press, the coining press, and the copying press, are good examples of the screw.

A micrometer screw measures minute distances.

Rules for relation of power to weight in the inclined plane and its derivatives:

1. *The Inclined Plane (usual case):*

$$\frac{\text{Power}}{\text{Weight}} = \frac{\text{Height of Plane}}{\text{Length of Plane.}}$$

2. *The Wedge (by pressure only):*

$$\frac{\text{Power}}{\text{Weight}} = \frac{\text{Back of Wedge.}}{\text{Side of Wedge.}}$$

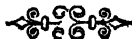
3. *The Screw.*

$$\frac{\text{Power}}{\text{Weight}} = \frac{\text{Distance between two threads.}}{\text{Circumference of Circle described by Power.}}$$

QUESTIONS.—What is an inclined plane? Classify the mechanical powers. Give examples of the inclined plane wedge, and the screw. What is the relation of the power to the weight in each of these mechanical principles? Repeat the great truth respecting speed and power. What is friction? Is it useful or not? Explain the modes of using wedges. Describe the screw. How may the power of the screw be increased? What is a micrometer screw? What force will just sustain a ton on an inclined plane, rising 1 in 100? What weight can a screw sustain, which is acted on by a power of 11b, the sweep of the power arm being 15ft., and the distance between the threads $\frac{1}{4}$ inch?

INFLUENCE OF GRIEF.

He that lacks time to mourn, lacks time to mend.
 Eternity mourns that. 'Tis an ill cure
 For life's worst ills, to have no time to feel them.
 Where Sorrow's held intrusive, and turned out,
 There Wisdom will not enter, nor true power,
 Nor aught that dignifies humanity.



NORTH AMERICA.

Savannah, a grassy plain.
Prairie, a vast meadow,
Altitude, height.

Umbrageous, shady.
Exuberance, superabundance,
Humidity, moisture.

America or the New World consists, strictly speaking, of two continents, which are united by the isthmus of Darien. Between these there is a striking resemblance. Both are broad in the north and gradually contract as they advance towards the south, till they end, the one in a rocky isthmus, the other in a rugged promontory. Each has a lofty chain of mountains, near its western coast; and each has one great central plain which declines to the south and to the north, and is watered by two gigantic streams. In their climate, however, and in their vegetation and animal productions, the two regions are very dissimilar.

The great characteristic of the physical features of America is magnitude. No rivers in the Old World convey such vast volumes of water to the ocean as the Mississippi and Amazon, many of whose tributaries even exceed in length the Volga or the Danube. Excepting the Himalaya, no mountain chains on this side of the globe can be compared in extent and altitude to the Andes; the Alps themselves dwindle into insignificance in the comparison. The plains, too, of the New World are as extensive and beautiful as its mountains are elevated and grand. In some places they spread out in one monotonous expanse like the boundless ocean; in others, the whole country is one wide, rich savannah, teeming with animal and vegetable life. The North American lakes are equally remarkable, extending in a chain from east to west. Each in size an inland sea, they excel everything of their kind of which the Old World can boast.

From the configuration of its surface, North America may be divided into four distinct physical regions:—

1. The eastern declivities of the Alleghany Mountains, extending to the shores of the Atlantic.

2. The maritime countries skirting the Pacific on the west.

3. The great valley of the Missouri and Mississippi, lying between the Alleghany and the Rocky Mountains, and embracing the greater portion of the continent. On the east, this region is rich and well wooded; in the centre, it is bare, but not unfertile; while towards the west, it is dry, sandy, and almost desert.

4. The great northern plain, four-fifths of which is a bleak and desolate waste, overspread with innumerable lakes, and resembling Siberia in the sterility of its soil and the rigour of its climate.

The great plains or prairies, which form so striking a feature in the physical geography of North America, are, in fact, vast natural meadows covered with luxuriant grasses and flowers, with here and there a clump of stunted brushwood. The only human inhabitants of these boundless plains are savage tribes of wild Indians, who are gradually disappearing, like snow before the sun, as the white man is slowly but surely encroaching on their favourite hunting grounds and converting them into fertile fields. They yield abundant harvests of grain.

Of animal life, however, in its lower forms there is an ample supply. The deadly rattlesnake lurks among the tall grasses; herds of fleet deer occasionally enliven the solitude by their presence; while bisons, which associate in thousands and fatten on the rich pastures, sometimes blacken the prairie by their countless numbers.

North America abounds in rivers, some of which are the largest in the world, and are almost all favourably distinguished by the characteristic of being navigable throughout the greater part of their course. Thus the Mississippi, with its tributary the Missouri, is navigable

to the foot of the great falls, a distance of 3200 miles from the sea, forming a means of internal communication even now of great use; but which must one day be invaluable, when the solitary prairies through which it flows are covered with populous cities, and the red skins have given place to the descendants of European settlers.

North America is pre-eminently the country of lakes, and exhibits masses of fresh water, which form just so many inland seas, remarkable as well for their extent as for their utility as channels of navigation. Lakes Superior, Huron, Michigan, Erie, and Ontario, alone contain one half of the fresh water of the globe, form a continuous chain whose united area considerably exceeds that of Great Britain. The superfluous waters collected in these huge basins are poured from one into the other till they reach the Lake of the Thousand Islands, and are finally discharged by the St. Lawrence into the Atlantic.

Between Lakes Erie and Ontario this vast volume of water falls over a precipice nearly 170 feet high, forming the famous Falls of Niagara, which for grandeur and sublimity are certainly not surpassed by any other natural scene in the world.

The continent of America possesses of course every variety of climate, but it is generally colder than in corresponding latitudes of the Old World. Thus, Great Britain enjoys a much higher temperature than Labrador and the country of the Equator, though lying in the same parallel. Even the torrid zone in America knows nothing of the burning heat experienced in Asia and Africa.

The chief causes of this comparatively low temperature are,—the extension of the land toward the North Pole, and the absence of mountains to shelter it from the icy blasts which are generated in that dreary region. But there are numerous other agencies at work, all tending to produce the same result. Thus the narrowness and elevation of the land near the Equator has a marked effect on the climate of tropical America. The great

mountain ranges, too, by checking the warm westerly winds, operate in the same direction; while the vast quantity of inland water in the form of immenso rivers and lakes, the absence of sandy deserts, and the abundance of forests impenetrable to the sun's rays, all tend to produce a climate in which winter and summer struggle for the ascendancy, and in which the seasons change with astonishing rapidity.

If Africa is distinguished for the variety and abundance of its animal life, America is remarkable for the diversity and exuberance of its vegetable productions. Owing to the moistness of its climate, the country is covered with the richest and densest vegetation. In the forest we find the fir, oak, ash, chestnut, beech, birch, larch, as well as mahogany, logwood, and many others peculiar to the New World.

All the various kinds of grain are successfully cultivated, and Europe is indebted to America for the potato, tobacco, maize, and numerous shrubs and flowers which adorn our gardens and green-houses, such as the fuchsia, dahlia, verbena, and nasturtium.

Of wild animals there is abundance of the ordinary kinds, and many that are not found in the Old World; but, at the time of its discovery the llama was the only domestic species in all this vast continent. Since then, however, the horse, ox, and others have been introduced, and have multiplied to an amazing extent.

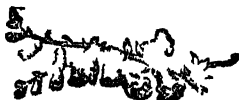
The inhabitants of North America consist of native tribes and European settlers, or their descendants. The former are rapidly disappearing, so that in a few years an American or Red Indian will be as great a curiosity as the dodo. In their place a new race is rising up, by whose magic touch the primeval forest and boundless prairie are being transformed into fertile fields, yielding crops of corn and cotton, sufficient to feed and clothe the world; a race, that in an incredibly short time rears populous cities on the banks of great inland rivers, where for ages only the beaver constructed his modest dwelling;

a race, that is covering the continent with a net-work of railways thousands of miles in extent, in short, a race, who, owing to its superior intelligence and energy of character, combined with well-nigh exhaustless resources, bids fair to be the dominant race of the world.

Of course, we refer to the inhabitants of the United States, who will, ere long, in all probability, absorb the whole of the continent of North America, having, let us hope, learned how to avoid those ruinous and destructive wars, that have been the curse of Europe, retarding those rapid advances in civilization which peace alone can secure.

SUMMARY—America consists of two continents, bearing a striking resemblance to each other. The rivers, lakes, mountain ranges, and plains, of the New World are distinguished for their magnitude. In comparison with them, the physical features of the Eastern Hemisphere dwindle into insignificance. North America embraces four distinct regions,—1 The Alleghany slope 2 The Pacific slope 3 The valley of the Mississippi and the Missouri 4 The great Northern plain. The climate of America is generally colder and subject to greater and more sudden changes than that of other countries in the Old World. America is remarkable for the diversity and exuberance of its vegetable productions. From it we first obtained the potato, tobacco, maize, the 'mulberry, dahli, nasturtium, etc. The native inhabitants are rapidly disappearing, but this we cannot regret, as their place is being taken by a superior race, composed principally of settlers from the British Isles and Germany.

QUESTIONS—In what respects do North and South America resemble each other? In what do they differ? Contrast the physical features of America with those of the Old World. How many North America be physically divided? What are the prairies? For what are the American rivers distinguished? Name the chief lakes. What causes affect the climate of America? Why is America an important country?



MY GOOD RIGHT HAND.

I fell into grief, and began to complain ;
 I looked for a friend, but I sought him in vain ;
 Companions were shy, and acquaintances were cold,
 They gave me good counsel, but dreaded their gold.
 "Let them go," I exclaimed : "I've a friend at my side,
 To lift me, and aid me, whatever bestride.
 To trust to the world is to build on the sand :—
 I'll trust but in Heaven and my good Right Hand."

My courage revived in my fortune's despite,
 And my hand was as strong as my spirit was light ;
 It raised me from sorrow, it saved me from pain :
 It fed me, and clad me, again and again.
 The friends who had left me came back every one,
 And darkest advisers looked bright as the sun ;
 I need them no more, as they all understand,—
 I thank thee, I trust thee, my good Right Hand !

Mackay.

THE COMPASS.

Magnesia, a town of Asia Minor. Cardinal, chief or head.
 Tested, tried, proved, Misery, wretchedness, trouble
 Voyages, journeys by sea, Discoveries, things found out.

Have you ever thought how ships are guided when no land is to be seen ? How is the sailor able to pursue his pathless way, for weeks together, over the world of waters, with nothing but sea and sky around him ? Now, this wonder, for wonder it is though so common, is performed by the aid of a small steel bar, under the name of a magnet.

Long ago there was found in Asia Minor, a particular kind of iron ore. This ore had the strange quality of attracting, or drawing towards itself, pieces of iron or steel. As this ore was largely found near the town of

Magnesia, pieces of it, used for showing this drawing or attractive force, were called *magnets*.

Of course, these pieces formed *natural magnets*. By-and-by it was discovered that by rubbing bars of iron or steel with these natural magnets, we could make artificial ones. These are the magnets always used; they can be made of almost any shape or size.

Magnets are generally either in straight bars, or bent round into a horseshoe form. The reason for bending the bar round like the letter U is to make both ends touch the same thing.

A pretty way to show the attraction of iron for magnets is to plunge a bar magnet into iron filings. Roll your magnet well about in the filings, and notice how they cluster round it in groups. You may notice, too, that the greatest quantity of iron filings hangs near the two ends. There is very little round the middle of the bar.

Those points where the magnet seems to have the most power are called its *poles*. These poles have nothing whatever to do with scaffold poles. The poles of a magnet are simply its points of greatest intensity, the spots where the magnet has its highest force.

One of these is called the north pole, and the other the south pole. The north pole is generally marked with the letter N, or with a notch. It is not unfrequently called the marked end of the magnet.

Magnets, besides the curious power they have of drawing iron to them, have another, and a very useful quality. This is the quality of pointing in one direction.

Suppose a bar magnet to be nicely balanced upon a point. Let it be free to move round any way it pleases. It will be found to point always in one certain direction. Pull it away from this direction as much as you will, it will finally return to it, after many indignant shakes.

This is a quality of the magnet that you can rely on. It is this steady looking at one point, which makes the magnet so valuable as a guide.

Since one end of the magnet (the marked end) points somewhat towards the north pole, the other end repre-

sents of course the reverse, that is the south pole. Then, at right angles from this line, you have east and west. Thus, by securing a fixed point, the others are easily ascertained.

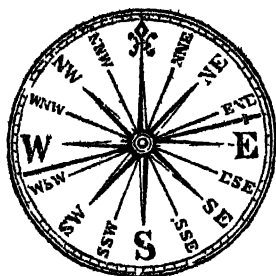
Now you are prepared to understand the principle of the compass. It is called generally the "Mariners' or Sailors' Compass," from its being so necessary to mariners.

A compass consists of two chief parts, the magnet and the card:—

1. The magnet is usually a flat polished bar of steel, properly made into a magnet. Being delicately balanced on its centre, it is free to move as it wishes. This is generally called the "needle," from sometimes being narrow and tapering at its ends.

2. The card beneath the magnet has a circle drawn on it. This circle is divided into 32 parts, called "points of the compass." There are, first of all, the four great points, north, south, east, and west,—these are also called the *cardinal* or chief points; and between these cardinal points are various other points or directions.

The point half way between any two cardinal points is named after both its parents. Thus half way between north and east is called north-east. Again, half way between north and north-east is termed north north-east, formed by adding the two terms together. There are other simple ways of marking the remaining points, after the plan of the following illustration:—



Naming the whole 32 points of the compass, right round, in their proper order, is called "boxing the compass."

Supposing the compass lost its magic power for a single day, what destruction and misery would be the consequence! When iron ships came into use, a difficulty was felt—you now know why. The compasses have to be carefully tested before going to sea, and most ships are provided with several—one being fixed aloft, to be beyond the influence of the iron.

I said the north, or marked end of the magnet, pointed somewhat towards the north; for the needle does not point exactly north and south at all places. In England, it points no less than 20 degrees away from the north towards the west. This distance from the true north is constantly changing, but the degree of the variation is always ascertainable. In London, in the year 1660, the needle pointed due north, and it may do so again in course of time.

The origin of the compass is not accurately known. The same may be said of many other great discoveries, such as that of the telescope. The Chinese knew of and used the compass, long before Europeans thought of it.

Before compasses came into use, sailors hardly dared to trust themselves far from the sight of land. The stars were their guides then, as, indeed, they still are to a certain extent.

SUMMARY.—A natural magnet is a certain iron ore. Magnets take their name from Magnesia. Artificial magnets, may be of different sizes and shapes. Magnets have two great qualities:—1. They attract iron or steel. 2. They point in one fixed direction, when allowed. The poles of a magnet are the points of greatest power. The north pole points towards the north nearly; the south end towards the south. The cardinal points are north, south, east, and west. The compass is a magnet, balanced above a card marked with the 32 points. The card is sometimes called the rose. The compass needle in London, at present, marks 20

degrees to the west of north. The needle shows a different direction at different places, and is constantly varying.

QUESTIONS.—What is a natural magnet? Why are artificial magnets used? What are the two great qualities of a magnet? What are the poles of a magnet? What is the advantage of a fixed and marked point? Describe the Mariner's Compass. How is it affected by iron ships, and how is the evil avoided? How does the needle really point in England? What was the origin of the compass?



SOUTH AMERICA.

Banquet, a feast.	Aborigines, original inhabitants.
Parasite, a plant growing on another.	Luxuriance, abundant growth.
Inundated, flooded.	Enterprising, adventurous.

From the character of its surface this peninsula may be divided into five distinct physical regions:—

1. The low country lying to the west of the Andes, and washed by the Pacific. This strip of land is about 4000 miles in length, and from 50 to 150 in breadth. The extremities are fertile, but the centre is a sandy desert.

2. The country drained by the Orinoco, consisting for the most part of treeless plains or *Uanos*, which during one part of the year are covered with tall grass; but in

the dry season, are so scorched by the intense heat that scarcely a green blade is visible.

3. The basin of the Amazon, a vast plain more than half the size of Europe, possessing a rich soil and a moist climate. It is covered everywhere with dense forests, harbouring innumerable wild beasts, and thinly peopled by savage tribes who live by hunting and fishing.

4. The great southern plain watered by the Río de la Plata and its numerous tributaries. This region, too, is occupied for the most part, by grassy plains, on which prodigious herds of half-wild cattle are reared.

5. The high country of Brazil, presenting alternate valleys and ridges, thickly covered with wood, on the side next the Atlantic, and opening into pasture lands in the interior.

The boundless *llanos* of the South bear a general resemblance to the prairies of the North; but, being situated within the tropics, are subject to greater changes at different seasons of the year.

In the dry season, the vertical rays of a tropical sun speedily convert the green sward into a dusty plain, the streams and pools of water gradually disappear, and the soil cracks and bursts as if rent by an earthquake. The crocodile and boa constrictor lie wrapped in unbroken sleep deeply buried in the arid soil. Shrouded in dark clouds of dust, and tortured by hunger and burning thirst, oxen and horses scour the plains, the one bellowing dismally, the other, with out-stretched neck sniffing the wind, in the vain endeavour to scent some pool of water not yet wholly evaporated.

At length, when all nature seems about to expire under the want of moisture, various signs announce the approach of the rainy season. No sooner do the showers moisten the earth, than the dormant powers of vegetation begin to awaken with an almost miraculous rapidity. The dull, tawny surface of the parched savannah changes, as if by magic, into a carpet of the

brightest green, enamelled with thousands of flowers of every colour.

The animal life of the savannah now awakens to the full enjoyment of existence. The horse and the ox revel in the grasses; not unfrequently, however, the jaguar thence makes a fatal spring upon his unsuspecting victims. The new formed pools and lakes, swarm with fish, and a host of water-fowl, ibises, cranes and flamingos regale on the welcome banquet. Countless multitudes of ants, sand-flies, and mosquitos, rattle-snakes, lizards, repulsive toads, scorpions—in a word, worms and vermin of all names and forms—emerge from the inundated plains; for the tropical rains have converted a waste, dreary as the Sahara, into a boundless lake.

On the same spot where, but a short time since, the thirsty horse sniffed the air in the vain search of some moisture, he is now obliged to lead an amphibious life, swimming from place to place in search of the grasses that raise their heads above the expansive waters.

But all the plains of South America are not savannahs. The basin of the Amazon, which is more than half the size of Europe, is one immense forest, bearing little or no resemblance, however, to the dark pine forests of our northern clime. Gigantic trees in endless variety tower into the air to the height of from one to two hundred feet; snake-like vines wind round and round their huge trunks, sending out long arms and binding tree to tree, till the whole forest is linked together in one impenetrable maze.

Parasites of every form, now resembling lilies, now grasses, or other familiar plants, clasp the trees with their slender roots. Towards the end of the rainy season, they are in blossom, and their exquisite appearance, as they encircle the mossy trunk with flowers of every hue, can scarcely be imagined.

Nor is this wild luxuriance the only feature. Monkeys are frolicking through festooned bowers; squirrels scamper from branch to branch; coatis are gamboling among the fallen leaves; the sloth, whose activity on his

native trees belies his name, climbs rapidly in search of a spot where he may enjoy undisturbed repose.

Birds of gaudiest plumage flit through the trees: the molnut utters his name in rapid tones; tucano, tucano, comes loudly from some fruit-tree where the groat toucans are rioting; the loud rattling of the woodpecker comes from some topmost branch. Parrots are chattering, paroquets screaming, and manakins piping in every low tree. Wood-pigeons fly startled, and pheasants of a dozen varieties go whirring off, at the least sign of danger.

Most beautiful of all, humming birds—living gems—are constantly darting by; now stopping to kiss the gentle flower, now battling with some rival humble bee. Butterflies, large as your hand and of the richest metallic blue, float lazily past, while from the flowers above comes the distant hum of myriads of gaily coated insects. From his hole in the sand the lizard in his gorgeous covering of green and gold starts nimbly forth, and armies of ants in their busy toil are incessantly marching past.

How changed from all this is a night scene! The flowers that bloomed by day have closed their petals, and a sister host now take their place filling the breezes with perfume. The moon darts down her glittering rays, but in vain she strives to penetrate that denseness, unless some fallen tree betrays a passage. Huge moths, those fairies of the insect world, have taken the place of the butterflies, and myriads of fire-flies never weary in their torch-light dance.

Far down the road comes on a blaze, steady, streaming like a meteor; it whizzes past, and for an instant the space is illuminated, and dewy jewels from the leaves throw back the radiance. It is the lantern fly, seeking what he himself knows best, by the fiery guide upon his head. The air of the night-bird's wing fans your cheek, or you are startled by his mournful note, wac-o-row, wac-o-row, sounding dolefully. The armadillo

creeps carelessly from his hole, and at slow pace makes for his feeding ground; the opossum climbs stealthily up the tree, and the ant-eater is out on his marauding expeditions.

The whole of this vast region is watered by the Amazon and its tributary streams. Rising in the Andes, at a height of 12,500 feet, it flows right across the continent, and is navigable for large ships for more than 2000 miles from its mouth. As yet, however, its waters are disturbed only by the canoe of the savage, or the boat of some enterprising traveller; no busy cities are found on its banks, but only here and there a wretched Indian village; and a district forty times as large as England and capable of supporting the population of the entire globe, is almost entirely uninhabited.

The mountain region of the west forms a striking contrast to the boundless savannahs and forest-covered plains which we have been endeavouring to describe. The mighty range of the Andes extends throughout the whole length of the continent at no great distance from the Pacific shores, and forms what has been called the back-bone of the world. It contains numerous volcanoes and many peaks over 20,000 feet in height. In the northern part of the range, that is, in the neighbourhood of the Equator, populous cities are formed on the mountain slopes and elevated valleys, at a height which in Europe would be covered with perpetual snow.

Thus La Paz in Bolivia is 12,192 feet above the sea level, Potosí 13,500, and the celebrated mines of that name 16,083, or higher than Mont Blanc. Quito with its 70,000 inhabitants enjoys a perpetual spring at a elevation of nearly 10,000 feet, while towering above it far into the deep blue tropical sky are the snow-covered summits of Chimborazo, Pichincha, Cotopaxi, and Antisana.

At the time of its discovery, South America contained a numerous population, many of whom had made considerable advances in the arts of civilized life; but the

inhumanity of the Spaniards, forced and uncongenial labour in the mines, European diseases, and ardent spirits, have terribly thinned the ranks of the aborigines.

The contrast between the past and present state of Peru affords a striking illustration of this statement. The ancient kingdom of Peru contained a population of 10,000,000 souls, and the country was cultivated in a manner of which China now affords the only example. Sandy plains were rendered fertile by irrigation, and mountain steeps, from which the llama could have scarcely picked its scanty food, were shaped into terraces, and tilled with elaborate care. No ground was neglected on which a blade of grass would grow, and harvests waved on heights now visited only by the condor and the eagle.

The palaces of an ancient nobility are yet to be discovered by their crumbling walls, in places now rarely trodden by the foot of man. The western coast, once highly populous and productive, is now, with the exception of a few valleys, not containing a tithe of their former population, little better than a desert. The valley of Santa, for instance, once contained 700,000 inhabitants,—the number does not now exceed 12,000; while the city of Cuzco, which numbered 200,000 inhabitants at the time of the Spanish conquest, now contains only 20,000. A vast territory, extending from the Amazon to the Andes, and from the Pacific to the sources of the Paraguay, is almost as depopulated as if it had been smitten by a destroying angel. Even now that the galling yoke of Spain has been thrown off, the blighting influence remains, and many of the fairest portions of this naturally highly-favoured peninsula are distracted by internal discussions and frequent revolutions, which render life and property insecure, and effectually retard the development of vast and varied resources.

VIEW.—South American coast, the strip of low land along the Pacific, the high lands of Brazil, the sandy plains watered by

the Orinoco and the La Plata, and the forest-covered basin of the Amazon. In the dry season, the savannahs and llanos are little better than desert wastes; in the rainy season, however, they are covered with a luxuriant vegetation, and teem with animal life. A Brazilian forest forms a striking contrast to the silent monotony of a forest scene in Europe. Huge trees in endless variety are linked together by snake-like vines, and curious parasites adorn their rugged trunks, while birds of gayest plumage find a home among their spreading branches. In the Andes, populous cities are found at heights which, in the temperate zone, would be above the line of perpetual snow. But, while nature has furnished this peninsula with a lavish hand, it lacks settled governments, and an enterprising people, capable of turning its ample resources to the best advantage.

QUESTIONS — What are the natural divisions of South America? Contrast the llanos in the dry and wet season. In what respect does a tropical forest differ from one in Europe? Give some account of the Amazon. Account for the existence of cities at great elevations in the Andes. Compare ancient with modern Peru. What causes have led to these results? What is the great want of South America at the present time?

THE REAPER AND THE FLOWERS

There is a reaper whose name is Death,
And, with his sickle keen,
He reaps the bearded grain at a breath,
And the flowers that grow between.

"Shall I have nought that is fair?" saith he;
"Have nought but the bearded grain?"
Though the breath of these flowers is sweet to me,
I will give them all back again."

He gazed at the flowers with tearful eyes,
He kissed their drooping leaves;
It was for the Lord of Paradise
He bound them in his sheaves.

"My Lord has need of these flowerets gay,"
The reaper said, and smiled:
"Dear tokens of the earth are they,
Where He was once a Child.

"They shall all bloom in fields of light,
Transplanted by my care,
And saints, upon their garments white,
These sacred blossoms wear."

And the mother gave, in tears and pain,
The flowers she most did love;
She knew she should find them all again
In the fields of light above.

Oh, not in cruelty, not in wrath,
The reaper came that day;
'Twas an angel visited the green earth,
And took the flowers away.

Longfellow.

THE CENTRE OF GRAVITY.

Definition, the strict mean- ing of a word or term	Vertical, straight up and down, perpendicular.
Symmetrical, evenly propor- tioned; properly shaped.	Vehicle, that by which anything is conveyed.
Plumbline, a small weight, suspended by a fine string.	Gravity, weight, pressure caused by the earth's attraction.

There has generally existed a confusion, in the minds of the beginners in science, between certain terms which have some word in common. Such, for instance, are the terms gravity, specific gravity, and centre of gravity. It is to an explanation of the last of these three expressions—viz., *centre of gravity*—that this lesson is devoted; and when you have grasped the idea conveyed in this phrase, you will cease to confound it with the other two terms.

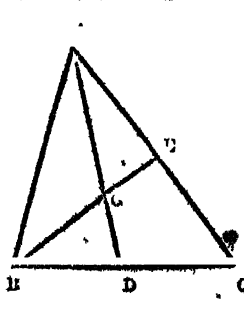
By the centre of gravity of a body is meant the centre of its weight; or, to speak more precisely, the centre of gravity of a body is that *point* about which the body will balance in *all* positions. Take notice of that little word *all*,—it will be found to be important.

Our first example shall be a long straight rod, of an

uniform substance. Then, clearly, its centre of gravity is at its middle point, for there are equal portions of the rod lying on each side of the middle line. If you try the experiment, you will find that the rod balances about this middle line, and this is what it ought to do, according to the definition just given.

Another very simple experiment is the finding of the centre of gravity of a flat circular piece of wood. The geometrical centre of the circle is of course its centre of gravity. Here you can easily imagine that the weight of the wood is arranged symmetrically, *i.e.*, quite evenly round its centre of magnitude, and that the wooden disc will balance on this point.

One more example to illustrate this most important definition. How shall we find the centre of gravity of a



triangular piece of cardboard? Proceed thus:—Draw a line from one of the angular points to the middle of the opposite side. *AD* is such a line. The triangle will balance about *AD*, for it is divided by it into two equal parts, so the centre of gravity of the whole triangle lies somewhere in the line *AD*, but its exact position is not shown.

Now draw a similar line from either of the other angular points to the middle of its opposite side, and let *BE* be this second line. For the same reason as before, the triangle will balance about this second line, and we know, therefore, that the centre of gravity must be in this line also.

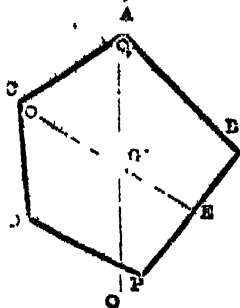
Well, if it is in both lines at once, it can be at no other point than the point *G*, where these two lines cross; and, accordingly, if you place any sharp pointed instrument under *G*, you will find that the triangle very nicely balances about this point.

I must warn you that the centre of gravity of a body need not necessarily be within the dimensions of the body. In a circular ring, for instance, as a child's hoop, the centre of gravity is at the centre of the circle, or which the hoop forms only the circumference. For, although such may not be the case, we can imagine the hoop to be firmly connected with its centre of magnitude, and then the hoop would balance about this point, and consequently, this is the centre of gravity. And so you will easily see that the centre of gravity of the curved piece of metal (A B) is not in any point of itself, but in some exterior point.



The centre of gravity of bodies possessing a regular form can be found by calculation, although in many cases these calculations are difficult. You can, however, find the gravity centre of any figure, regular or irregular, in the following simple way:—Suspend it from any point, and from the same point let a plumb-line hang freely. Mark on the body the direction of this plumb-line. Then take down the body and the plumb-line, and again suspend them from any other point, and, as, before, mark the position of the plumb-line. The point where the two positions of the plumb-line intersect or cross each other, will be the point required. You can always verify your work by actually trying whether the object will balance on this point, or not.

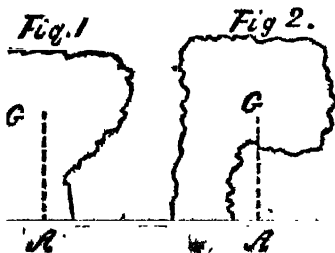
Here is the whole arrangement. B D is an irregular board, C E is the first line marked out by the plummet, when suspended from the point C. The second position of the plumb-line is indicated by the line A P: the point G, where these two lines intersect, is, of course, the centre



of gravity. In this way, the centre of gravity of such an awkward body as a chair can be ascertained.

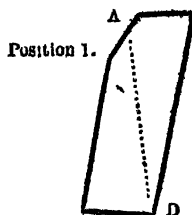
The plumb-line, or plummet, mentioned so frequently, is simply a heavy weight—as a ball of lead—suspended from a fine string. Bricklayers and masons use plumb-lines to keep their work perfectly upright.

All this may seem to be of very little use. But you will see the vast importance of having some knowledge of the meaning of the centre of gravity, from the following very important rule:—*A body will rest or fall according as the vertical line from its centre of gravity falls within or without its base.* You cannot make yourself too well acquainted with this law; a general acquaintance with it would prevent many an accident.



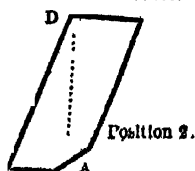
the body stands. In the second figure, the vertical from its centre of gravity falls outside of the base; consequently the mass will fall.

A very handy illustration of this useful law is afforded by a little piece of apparatus which almost any one can make. It consists of a block of wood, A D, which slopes considerably. A small piece is cut off one of its corners, as at A. You see the vertical line passing through its centre of gravity is marked on it. In position 1, this vertical falls within the base, and the block stands. But turn the block upside



down (position 2), and you will see that the vertical falls outside of the base, owing to the corner being cut off. The block will now fall with striking effect.

It is no matter, then, you may think, how small the base of an object is, if the fundamental condition be fulfilled as to the vertical line



from the centre of gravity falling within the base, for then the object will stand. This is quite true; but if the base be small, a very little force will cause the line to fall outside the base, and thus the body is easily upset. You can imagine, for instance, in a needle or in an egg placed on end, that their verticals from their gravity centres might, by delicate management, be brought to fall just on their narrow bases; but the least force would be sufficient to overturn them. Hence a broad base is one of the conditions of good stability.

Now see the application of this great natural law in the everyday affairs of life. Wagons are frequently piled very high with light materials, as hay or hops. The higher they are loaded, the more does the centre of gravity rise. A very little unevenness on one side of the wagon causes the load to incline so much, that the vertical from the centre of gravity falls outside the base, which, in this case, means outside the wheels, and so the wagon tips over. Hence the necessity for placing the heaviest part of the load at the bottom of the vehicle. As a measure of safety, carts intended to carry much weight are now often built very low, the bottom of the cart being placed considerably below the centre of the wheels. It thus becomes very difficult to upset such vehicles.

In a small boat it is dangerous for the passengers to stand up; for, the centre of gravity of the whole being raised, the boat is likely to upset.

There are some instructive toys, which are founded on this principle. Two little wooden figures are fixed on

bases; one slopes considerably forward, the other, very much backward. Each finds it impossible to stand unaided. But place on them, in a proper position, a good-sized block of wood, to represent a burden, and now they can both stand. Why? Because, on account of their burdens, their centre of gravity is thrown into such a position, that the vertical from it falls within the base. Properly speaking, I ought to have said the common centre of gravity of the figure, and its burden.

There are other toys founded on a knowledge of the centre of gravity, as, for example, the horseman apparently galloping over a precipice, and the dancer balanced on a pivot.

In rope-dancing, the performer is aided by a long pole; so that the rope-dancer may be said to carry his centre of gravity in his own hands. For if he feels himself falling too much on one side, he has only to throw his pole towards the other, to recover his balance. The bicycle is another example.

Here is an experiment without any apparatus, and one which any person can try easily.* Stand sideways close up against a wall, and lift up the outer leg. I ought to add *if you can*, for you will find yourself unable to do this simple act without falling. The reason is, that, owing to your having placed yourself *quite* close to the wall, you cannot bring the vertical line from the centre of gravity of your body over the one foot upon which you try to stand. Since the vertical falls outside the base line, you must fall.

In Italy there are two remarkable leaning towers,—those of Pisa and Bologna. The leaning tower of Pisa is 315 feet high, and overhangs its base more than 12 feet. The Bologna tower, 134 feet high, is rather over 9 feet out of the perpendicular. Yet these towers stand securely; for they were so built, that their verticals from the centres of gravity should follow the law explained in this lesson.

SUMMARY.—The centre of gravity is the point about which a body will balance in all positions. The centre of gravity of a uniform bar is its middle point. That of a circular disc is its geometric centre. That of a triangle is the intersection of two bisecting lines. The centre of gravity is not necessarily within the substance of a body. The centre of gravity of irregular bodies may be found by suspending them from two different points, and marking each time the vertical direction. A plumb-line, or plummet, is a heavy weight suspended by a fine flexible string.

Fundamental Rule.—A body will rest or fall according as the vertical line from its centre of gravity falls within or without its base.

A broad base adds to the stability of a body. Lowness of centre of gravity is the great essential of stability.

Wagons ought not to be piled too high, nor passengers stand up in small boats.

A body may slope considerably and yet stand, if the fundamental rule be observed. Examples:—The leaning towers of Italy.

QUESTIONS.—Define the centre of gravity of a body, and give examples. How may the centre of gravity of a triangle be found? Explain the position of the centre of gravity of a hollow globe. Show how to find the centre of gravity of an irregular-shaped board. What is a plumb-line? State the most practically useful law respecting the centre of gravity. Give simple illustrations of this fundamental law. State the great conditions of stability. In carrying a pail of water in the hand, we lean sideways; why? Why do leaning towers not fall over?

TO-MORROW.

Where art thou, beloved To-morrow?
 When young and old, and strong and weak
 Rich and poor, through joy and sorrow,
 Thy sweet smiles we ever seek,—
 In thy place—ah! well-a-day!
 We find the thing we fled—To-day.

THE DESTRUCTION OF SENNACHERIB.

The Assyrian came down like a wolf on the fold,
And his cohorts were gleaming in purple and gold;
And the sheen of their spears was like stars on the sea,
When the blue wave rolls nightly on deep Galilee.

Like the leaves of the forest, when summer is green,
That host, with their banners, at sunset were seen :
Like the leaves of the forest, when autumn hath blown,
That host, on the morrow, lay withered and strown.

For the Angel of Death spread his wings on the blast,
And breathed on the face of the foe as he passed :
And the eyes of the sleepers waxed deadly and chill,
And their hearts but once heaved, and for ever grew still.

And there lay the steed, with his nostril all wide,
But through it there rolled not the breath of his pride;
And the foam of his gasping lay white on the turf,
And cold as the spray of the rock-beating surf.

And there lay the rider, distorted and pale,
With the dew on his brow and the rust on his mail;
The tents were all silent, the banners alone,
The lances unlifted, the trumpet unblown.

And the widows of Asshur are loud in their wail,
And the idols are broke in the temple of Baal ;
And the might of the Gentile, unsmote by the sword,
Hath melted like snow in the glance of the Lord.

Byron.



PHYSICAL GEOGRAPHY.

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THE AIR-OCEAN.

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- Impalpable** [Fr., *impalpable* —*L.* in, not, and *palpo*, I touch softly, stroke; caress, coax, wheedle, flatter], *adj.*, not palpable or perceivable by touch; so fine that it cannot be felt.
- Unmitigated** [A.-S., *un*, not, and *L.*, *mitigo* (-*atum*), I make mild, mellow, soft, or tender, I make gentle, tame, soothe, assuage, appease, etc.—*miti*, mild, soft, gentle], *adj.*, not softened in severity or harshness. Here, not lessened in brightness.
- Noxious** [L., *noxius*, hurtful, injurious, — *noxa*, hurt, harm, injury, — *noceo*, I hurt], *adj.*, hurtful; unwholesome; unhealthy; producing evil or injury; destructive; poisonous.
- Ambient** [L., *ambi*, about, and *ire*, going on, I go], *adj.*, going round, surrounding, investing; encompassing.

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Enveloping this solid globe of ours are two oceans, one partial, the other universal. There is the ocean of water, which has settled down into all the depressions of the earth's surface, leaving dry above it all the high lands, as mountain ranges, continents, and islands; and there is an ocean of air, which enwraps the whole in one transparent mantle. Through the bosom of that ocean, like fishes with their fins and whales with their flippers, birds and other winged creatures swim; whilst, like crabs and many shell-fish, man and other mammalia creep about at the bottom of this aerial sea.

The air-ocean, which everywhere surrounds the earth, and feeds and nourishes it, is even more simple, more grand, and more majestic, than the "world of waters;" more varied and changeful in its moods of storm and calm, of ebb and flow, of brightness and gloom. The atmosphere is, indeed, a wonderful thing, a most perfect example of the economy of nature. Deprived of air, no animal would live, no plant would grow, no flame would

burn, no light would be diffused. The air, too, is the sole medium of sound. Without it, mountains might fall, but it would be in perfect silence—neither whi per nor thunders would ever be heard.

The atmosphere is supposed to extend from the earth to a height of between forty and fifty miles.

A philosopher of the East, with a richness of imagery truly Oriental, thus describes it:—"It surrounds us on all sides, yet we see it not; it presses on us with a load of fifteen pounds on every square inch of surface of our bodies, or from seventy to one hundred tons on us in all, yet we do not so much as feel its weight. Softer than the softest down, more impalpable than the finest goose-down, it leaves the cobweb undisturbed, and scarcely stings the lightest flower that feeds on the dew it supplies: yet it bears the fleets of nations on its wings around the world, and crushes the most refractory substances with its weight.

When in motion, its force is sufficient to level with the earth the most stately forests and solid buildings—to raise the waters of the ocean into ridges like mountains, and dash the strongest ships to pieces like toys. It warms and cools by turns the earth and the living creatures that inhabit it. It draws up vapours from the sea and land, retains them dissolved in itself, or suspended in cisterns of clouds, and throws them down again as rain or dew when they are required. It bends the rays of the sun from their path, to give us the twilight of evening and of dawn; it disperses and refracts their various tints to beautify the approach and the retreat of the orb of day.

"But for the atmosphere, sunshine would burst on us with a steady glare, and at once remove us from midnight darkness to the blaze of noon. We should have no twilight to soften and beautify the landscape; no clouds to shade us from the scorching heat, but the bald earth, as it revolved on its axis, would turn its tanned and weathered front to the full and unmitigated rays of the lord of

day. It affords the gas which vivifies and warms our frames, and receives into itself that which has been polluted by use, and is thrown off as poisonous. It feeds the flame of life exactly as it does that of the fire,—it is in both cases consumed, and affords the food of consumption, in both cases it becomes combined with carbonic acid, which requires it for combustion, and is removed by it when this is over."

"It is only the girdling, encircling air," says another philosopher, "that flows above and around all, that makes the whole world kin. The carbonic acid with which to-day our breathing fills the air, to-morrow corks its way round the world. The date-trees that grow around the falls of the Nile will drink it in by their leaves; the cedars of Lebanon will take of it to add to their stature; the coconuts of Tahiti will grow rapidly upon it, and the palms and bananas of Japan will change it into flowers.

"The oxygen we are breathing was distilled for us some short time ago by the magnolias of the Susquehanna, and the great trees that skirt the Orinoco and the Amazon;—the giant rhododendrons of the Himalaya contributed to it, and the roses and myrtles of Cashmere, the cinnamon-tree of Ceylon, and the forest elder than the flood, buried deep in the heart of Africa.

"The rain we see descending was thawed for us out of the icebergs which have watched the polar star for ages, and the lotus lilies have soaked up from the Nile, and exhaled as vapour, what, in the form of snow, once rested on the summits of the Alps."

The atmosphere which forms the outer surface of the habitable world is a vast reservoir, into which the supply of food designed for living creatures is thrown; or, in one word, it is itself the food, in its simple form, of all living creatures. The animal grinds down the fibre and the tissues of the plant, and the nutritious store that has been laid up within its cells, and converts these into the substance of which its own organs are composed. The

plant acquires the organs and nutritious store thus yielded up as food to the animal, from the air surrounding it.

But animals are furnished with the means of locomotion and of seizure—they can approach their food, and lay hold of and swallow it; plants must wait till their food comes to them. No solid particles find access to their frames; the restless ambient air, which rushes past them loaded with the carbon, the hydrogen, the oxygen, the water, everything they need in the shape of supplies, is constantly at hand to minister to their wants, not only to afford them food in due season, but in the shape and fashion in which alone it can avail them.

There is no employment more ennobling to man and his intellect than to trace the evidences of design and purpose in the Creator, which are visible in all parts of the creation. Hence, to him who studies the physical relations of earth, sea, and air, the atmosphere is something more than a shoreless ocean, at the bottom of which he creeps along. It is an envelope or covering for the dispersion of light and heat over the surface of the earth; it is a sewer into which with every breath we draw we cast vast quantities of dead animal matter, it is a laboratory for purification, in which that matter is recomposed, and wrought again into wholesome and healthful supplies; it is a machine for pumping up all the rivers from the sea, and conveying the waters from their fountains in the ocean to their sources in the mountains; it is so constructed, so ingeniously and marvellously adapted for benign and beneficent purposes.

Mauvy.



THE OCEAN.

Refrigerating, cooling.	Buoyant, light, floating
Submarine, under the sea	Illimitable, without bounds
Migration, change of place.	Propelled, driven forward

All creation is ever changing. The stars, which were supposed to be fixed to the canopy of heaven, are restless wanderers through the illimitable regions of space. The hardest rocks melt away under the corroding influence of time, for the elements never cease gnawing at their surface, and dislocating the atoms of which they are composed. Our body appears to us unchanged since yesterday; and yet how many of the particles which formed its substance have, within these few short hours, been cast off and replaced by others! We fancy ourselves at rest, and yet a torrent of blood, propelled by an ever-active heart, is constantly flowing through all our arteries and veins.

A similar external appearance of tranquillity might deceive the superficial observer, when sailing over the vast expanse of ocean, at a time when the winds are asleep, and its surface is untroubled by a wave. But how great would be his error! For every atom of the boundless sea is constantly moving and changing its place; from the lowest deep to the surface, or from the surface, to the lowest deep; from the frozen pole to the scorching equator, or from the frozen zone to the Arctic Ocean; now rising in the air in the form of invisible vapour, and then again descending upon our fields in fertilising showers.

The waters are, in fact, the greatest travellers on earth: they know all the secrets of the submarine world; climb the peaks of inaccessible mountains; excel the lofty flight of the condor, and penetrate deeper into the bowels of the earth than the miner has ever sunk his shaft.

Even in the torrid zone, the waters of the ocean, like a false friend, are warm merely on the surface, being of almost icy coldness at a considerable depth. This low temperature cannot be owing to any refrigerating influence at the bottom of the sea, as the internal warmth of the earth increases in proportion to its depth. Nor do the waters of deep lakes, in a southern climate, ever show the same degree of cold as those of the vast ocean.

The phenomenon in fact arises from a constant submarine current of cold water from the poles to the line; while the higher temperature of the surface is caused by the warming rays of the sun, which, as we all know, distributes heat in a very unequal manner over the surface of the globe.

Heat expands all liquid bodies, and renders them lighter; cold increases their weight by condensation. In consequence of this physical law, the waters of the tropical seas, rendered buoyant by the heat of a vertical sun, rise and spread over the surface of the ocean to the north and south; whilst colder and heavier streams, from the higher latitudes, flow towards the equator along the bottom of the ocean, to replace them as they ascend.

In this manner, the unequal action of the sun calls forth a general and constant movement of the waters from the poles to the equator, and from the equator to the poles; and this perpetual interchange is one of the chief causes by which their purity is maintained. These opposite currents would necessarily flow direct to the north or south, were they not deflected from their course by the rotation of the earth, which gradually gives them a westerly or easterly direction.

The unequal influence of the sun in different parts of the globe, combined with the rotatory motion of the earth, are, however, not the only causes by which the course of ocean-currents is determined.

Violent storms move the waters to a considerable depth, and retard the flow of rivers: hence, as we shall

afterwards learn, continuous winds, even of moderate strength, play an important part in impelling the waters in a corresponding direction.

SUMMARY.—All nature is constantly undergoing change. The so-called fixed stars are restless wanderers through illimitable space. The corroding influence of the elements gnaws at the surface and loosens the atoms even of the hardest rocks. The boundless ocean, which at times wears the external appearance of tranquillity, is ever in motion, now rising in invisible vapours, and then descending in fertilizing showers. The waters are the greatest travellers; they climb inaccessible mountains, and penetrate deep into the bowels of the earth. The primary cause of this phenomenon is the warming rays of the sun. This heat renders fluids buoyant, so that in the tropics the lighter waters spread over the surface towards the north and south, while colder and heavier streams flow in under-currents from the poles. The motion of the earth, the tides, prevailing winds, and opposing obstacles, all contribute to produce that incessant restlessness for which the ocean is proverbial.

QUESTIONS.—What is the great cause of motion in the ocean? Explain how heat operates on the waters. What would be the direction of the currents, if there were no secondary causes at work? What other forces are acting on the ocean? In what way do they modify the courses of ocean currents?



THE GULF STREAM.

Transverse, cross-wise.

Reservoir, a water store.

Pulsation, a beating, throbbing.

Deflected, turned aside.

Prominence, a projecting point.

Encompassed, surrounded.

There is a river in the ocean, flowing at the rate of from thirty to seventy-eight miles a day. In the severest droughts it never fails, and in the mightiest floods it never overflows. Its banks and its bottom are of cold water, while its current is of warm. The Gulf of Mexico is its fountain, and its mouth is in the Arctic seas. It is the Gulf Stream. There is in the world no other such majestic flow of waters. Its current is more rapid than the Mississippi or the Amazon.

Its waters, as far out from the Gulf as the Carolina coasts, are of an indigo blue. They are so distinctly marked, that their line of junction with the common sea-water may be traced by the eye. Often one half of the vessel may be perceived floating in Gulf Stream water, while the other half is in common water of the sea; so sharp is the line, and such the want of affinity between those waters, and the reluctance, on the part of those of the Gulf Stream, to mingle with the common water of the sea.

Sea-faring people often throw a bottle overboard enclosing a paper, marking the time and place at which it is done. In the absence of other information as to currents, that afforded by these mute little navigators is of great value. Bottles cast into the sea midway between the Old and New Worlds, near the coasts of Europe, Africa, and America, at the extreme north or farthest south, have been found either in the West Indies, or within the well-known range of Gulf Stream waters.

Of two cast out together on the south coast of Africa, the one was found on the island of Trinidad, the other

on Guernsey in the English Channel. Another bottle, thrown over off Cape Horn by an American master, was picked up on the coast of Ireland. From this, it appears that the waters from every quarter of the Atlantic tend toward the Gulf of Mexico and its stream.

The question arises,—What causes the Gulf Stream? Water at the poles is cold enough to ice champagne, and at the equator it is nearly warm enough for shaving. Water expands when warmed; our pots boil over; and although the ocean certainly is nowhere hot enough to boil a leg of mutton, the great mass of water rises under the influence of tropic heat above the common level, and runs over the poles, leaving its place empty for cold water to rush in and occupy. Precisely in the same way, air, which is another ocean, swells at the equator, and pours out its deluge north and south over the colder current, which runs in to take advantage of the vacancy, and warms itself. When warm, it also will get up.

. That is one fact: another modifies it. The earth rolls on its own axis. If you stick a knitting-needle through the centre of an orange, and cause the orange to rotate on the needle, then you have a model of the earth revolving on its axis. The needle comes out of the North Pole above, and out of the South Pole below; and if you scratch a line all round the orange, half-way between pole and pole, that is the imagined line called the equator.

Now take two little pins; stick one of them on the equator, and another in the neighbourhood of either pole; set the orange now revolving, like the globe itself, from west to east, and make precisely one revolution. In the same space of time one pin has travelled through a great space, you perceive,—all round the orange, as it were; while the pin near the pole has had a very tiny journey to perform, and on the pole itself would absolutely not revolve at all. So, then, upon this world of ours, everything on or near the equator spins round in the twenty-four hours far more rapidly than anything placed near the poles.

But everything partakes of the movement of a railway train: when the train stops suddenly, your body travels on and is thrown violently forward. So air and water, flowing from the equator in great currents, because they cannot at once accommodate themselves to the slower movements of the earth as they approach the poles, retain their progressive force, and shoot on eastward still, as well as north and south. The slow trains coming up from the poles are outstripped by the rapid movement of the earth below, and being unable readily to accommodate themselves to it, they lag behind and fall into a westward course.

By this movement of the earth, therefore, a transverse direction is communicated to the great equatorial and polar currents, whether of air or water. Furthermore, local peculiarities, arrangements of island and continent, plain and mountain, land and water, cause local variations of temperature; and every such variation modifies or creates a current.

Taking the South Pole as the starting point, let us trace the mighty current under notice. It first of all runs through the great sieve of islands between Australia and China, part of it being diverted northward in a warm current along the south-eastern borders of Japan.

Now we follow it into the Indian Ocean, where the currents are inextricably complicated with the winds; but if the winds expect attention just at present, they may whistle for it. It is enough to say that the great equatorial stream, still pouring westward, strikes against the coast of Africa, and, finding no thoroughfare, pours southward on each side of Madagascar, and doubles the Cape. Then turning northward, it is diverted, by the shape of the coast between Benin and Sierra Leone, not from the land, but from the edge of a returning stream that coasts it.

After giving off a north-west branch, with a temperature now of seventy-nine degrees under the equator, the

main current strikes the east prominence of South America, at Cape St. Roque. This causes it to split. A southerly branch flows in the direction of Cape Horn, and goes home to the Pacific, tired of travel; but the remainder hastening northward, flows through the West India Islands into the Gulf of Mexico, which is simply a hollow excavated, by its stream.

Remember that the outline of land is not caused only by the action of a current; it is determined, also, by the softness or hardness of the soil; the loose surface wears away, while rocks oppose a barrier. The West India Islands are nothing more than hard stubborn, resisting rocks that have withstood the constant action of a current which has, however, been successful in eating through the softer parts. Thus it has made a great bite in the Gulf of Mexico, and left us the West India Islands sprinkled about, like bones that have proved too hard for digestion.

In the Gulf of Mexico, encompassed by land, the water which has for a long time been acquiring warmth, offers the greatest contrast to the chilly state in which it set out on its journey. Near the mouth of the Mississippi its temperature reaches eighty-nine degrees.

As the stream flows constantly into the Gulf, it must, of course, also constantly flow out. It flows out between Florida and Cuba, now under the name of the Gulf Stream. This coasts northward, having a cold counter-current between it and the shore, and crosses the Atlantic south of the great bank of Newfoundland, most of it flowing southward, to return home by a set of counter-currents. A branch of it, Rennel's Current, touches the Irish coast, and makes a circuit in the Bay of Biscay, sending a weak offshoot up the Irish Channel.

We fix the water's heart in the great Southern Ocean, not only because the intense cold of the south polar continent determines action in that direction; but also because there is there a wide expanse of sea—the widest on the globe—susceptible of manifold impressions.

The Pacific is full of natural breakwaters, reefs, shoals, and islands. At the North Pole, though there is, indeed, chiefly water, the lands of Europe, Asia, and America, destroy the general expanse. In the enormous reservoir of water which surrounds the lofty continent of the South Pole, we find the heart of the great circulating system; and not only do the grandest ocean currents take their rise in it, but in it also commences the pulsation of the tidal wave.

SUMMARY.—The Gulf Stream is caused by tropical heat combined with the earth's revolution on its axis. By this movement a transverse direction is communicated to the great equatorial and polar currents. Local peculiarities in the arrangements of islands and continents, plain and mountain, land and water, cause variations and modifications in this great ocean stream. Starting in the south, this mighty river threads the mazes of the Eastern Archipelago, and finds its way into the Indian Ocean. Still flowing westward it strikes against Africa, pours southward, on each side of Madagascar, and doubles the Cape. Then crossing the Atlantic, it reaches South America at Cape St. Roque, where it divides into two streams—a southerly branch, which is ultimately lost in the Pacific; and a northerly one, flowing through the West Indies into the Gulf of Mexico. It finds its way into the ocean again by the channel which divides Cuba from Florida, skirts the coast of North America, and again crosses the Atlantic south of the great bank of Newfoundland.

QUESTIONS.—What is the Gulf Stream? Why so called? What causes it? Explain this by a familiar illustration. What simple plan is adopted to ascertain the direction of ocean currents? Give examples. Describe the course of the Gulf Stream. What advantage do we derive from it?



THE GIRL AND THE DROWNING LAMB.

Seek who will delight in fable,
I shall tell you truth. A lamb
Leapt from this steep bank, to follow
'Cross the brook its thoughtless dam.

Far and wide, on hill and valley,
Rain had fallen—unceasing rain ;
And the bleating mother's young one
Struggled through the flood in vain.

But it chanced a cottage maiden—
Ten years scarcely had she told—
Seeing, plunged into the torrent,
Clasp'd the lamb and kept her hold.

Whirl'd adown the rocky channel,
Sinking, rising, on they go ;
Peace and rest, as seems before them,
Only in the lake below.

Oh ! it was a frightful current,
Whose fierce wrath the girl had braved,
Clap your hands with joy, my hearers,
Shout with triumph: both are saved !

Saved by courage that with danger
Grew, by strength the gift of love ;
And belike a guardian Angel
Came with succour from above.

Wordsworth.



THE TIDES.

Prevalence, abundance.
Assuaged, abated, lessened.
Causeway, a raised road.

Recurring, happening again,
Periodic, at regular intervals.
Enormous, very large.

It is not without opposing efforts on the part of the other heavenly bodies that the earth maintains its shape: these efforts indeed are ceaseless, and are put forth most powerfully by the moon on account of its short distance, and by the sun by virtue of its enormous mass. It is true that these forces are unable to draw the solid parts of the earth straightway from their places; but they are strong enough to set up some peculiar periodic movements in the readily lifted masses of the air and of the sea. Those of the atmosphere are not easily seen: those of the sea, however, meet our view at once. They consist in an alternate rising and falling of its surface, each recurring regularly twice in every day, and are generally known as the *ebb* and *flow* of the water, or, shortly, as the *tides*.

On all sea-coasts, where the tides are felt, the water, are found at all times, even when the air is quite calm and clear, to be in restless motion. Great waves are ever rolling in, and breaking on rocky shores into foam and spray. All parts of the coast-wall that can be loosed from their hold, are step by step torn off by their ceaseless attack; and the firmest rocks are slowly worn and ground away by the sea-sand driven in the water. Numbers, too, of plants and of animals living in the sea, such as shell-fish, with the remains of fishes, are thrown up and left upon the beach.

It is only on flat or gently sloping shores of narrow-mouthed gulfs, running far up into the land, or on coasts where the force of the ocean-swell is broken by sand-banks, or by reefs of rock at some distance from the land, that this violence of the breakers is assuaged or alto-

gether calmed. If you have ever been at the seaside at a place where the tides are strong, and where the shore slants gently to the water, you must have remarked that every wave, as it comes in, runs several paces upward on the beach, and, immediately retreating, leaves uncovered again much of the surface which it had just overflowed. If the tide is rising, you will observe that the retreating water does not fall quite to its former level, and that almost every fresh wave rolls a little higher up than did the one before it. The advance is scarcely perceived at first, but step by step it becomes more evident.

About three hours after the moment of lowest ebb, the rise of the tide is strongest; then again it becomes slower and slower, till, after three hours more, the flood-tide has reached its greatest height, at which it remains a short time without perceptible change. The fall of the tide begins as slowly as the flow, then the water retreats more quickly, and then again more slowly; and once more, after six hours, the ebb has reached its lowest; and there, again for a short time, its level is kept unchanged.

There are many places on the English shores where you may see the effect of these changes shown in striking contrasts of scenery; perhaps at none more beautifully than at Ilfracombe, in Devonshire. But at St. Malo, on the French coast, you may witness this wonderful sight even on a *grand* scale.

At low tide, St. Malo itself seems to be surrounded on three sides with wild craggy rocks, which are covered with mussels and seaweed, and among which start up the lofty walls of the town. The level places between the cliffs are covered with a layer of fine sand, firm enough for walking, and formed almost entirely of powdered mussel-shells. Here and there are pools containing water, which its taste, as well as the prevalence of little crabs, mussels, and star-fish, show to be seawater left behind by the tide. A fringe of seaweed marks upon the rocks the line which must be reached by

the sea, whose roar is now only heard from a distance. And now, but a few hours later, how changed the scene! The town is almost entirely surrounded by the sea, the waves of which are beating round the walls, breaking at their feet, and throwing the spray sometimes to their very top. The only communication with the land is now afforded by a long causeway, which you see at once to be the work of man, and which is no broader than the road which runs along it. On the side of this causeway towards the open sea, the rolling surge is striving against the barrier which meets it, dashing up in breakers thirty or forty feet high, and drenching with spray the wanderer who may tarry on the road.

The many cliffs which had been remarked before are now hidden under water, all but a few of the highest points of rocks, which you could have reached on foot, before, but which now are islands in the sea. The other side of the mole is also washed by the sea. But here the fury of the waves is less, for it has been spent upon all the rocks and islets without; and as the flood has here run up far into the land—having had, besides, after passing between the cliffs, to find its way around the town—it retains but little of its former force. Here is the harbour of St. Malo, quite dry at low water, and at flood-tide a great lake roomy enough for several thousand vessels, which, however, you will not, for obvious reasons, see within it.

SUMMARY.—The action of the heavenly bodies, especially of the moon, on the sea, produces an alternate rising and falling of its surface, each recurring regularly twice a day. This periodic rise and fall of the waters keeps the sea ever in motion. The contrast in the appearance of some places at ebb and flood-tide, is most remarkable. Perhaps this wonderful phenomenon can nowhere be witnessed on a grander scale than at St. Malo, in France. At low water, the city is surrounded on three sides with wild craggy rocks, long reaches of sand with here and there a pool, the home of crabs, mussels, and star-fish. At flood tide, the rolling surge dashes in breakers against the rocky barriers, drenching the unwary wanderer with spray; and the harbour which was quite dry at low water, is now a lake roomy enough and deep enough to float several thousand vessels.

QUESTIONS.—What are the tides? What causes the tides? What is meant by ebb tide and flood tide? Give some account of the ebb and flow of the tides. Describe St. Malo at low water. What is its appearance at flood tide? Why are large vessels not found within it?



THE RAINS.

Zenith, the point directly overhead.
Terrestrial, relating to the earth.
Dissipates, scatters, dispenses.

Transit, a passing.
Enervated, weakened.
Etsue, follow.

The temperature, the winds, and the rain, having an intimate connection with each other, and playing alternately the part of cause and effect, the earth may conveniently be divided into two great zones: the one, that of periodic rains, or of the tropical regions; the other, that of variable rains, or of the temperate regions.

In the equatorial regions, where the course of temperature and winds is regular, that of rains is equally so; and instead of seasons of temperature, which are there unknown, the inhabitants draw the distinguishing line between the dry and the rainy seasons.

Whenever a trade-wind blows with its wonted regularity, the sky preserves a constant serenity and a deep azure blue, especially when the sun is in the opposite hemisphere, the air is dry and the atmosphere cloudless. But in proportion as the sun approaches the zenith of a place, the trade-wind grows irregular, the sky assumes a whitish tint and becomes overcast; clouds appear, and sudden showers accompanied with fierce storms ensue. Showers occur more and more frequently, and turn at length into floods of rain, inundating the earth with torrents of water. The air is at this time so damp that the inhabitants are in an incessant vapour bath. The heat is heavy and stifling, the body becomes dull and enervated, this is the period of those dangerous fevers that destroy so great a number of the settlers who have

come from the temperate zones. But vegetation puts on a new freshness and vigour; the desert itself becomes animated, and is overspread for a time with enchanting verdure, which furnishes pasture to thousands of animals. Shortly, however, the sun, passing on his annual progress, advances and pours down his vertical rays upon other places; the rains diminish, the atmosphere becomes once more serene, the trade-wind resumes its regularity, and the heavens again shut their windows until the following season.

Such is the normal course of the tropical rains. They fall on each spot during the passage of the sun through the zenith. The heat is then so violent that the ascending current of air neutralizes the horizontal trade-wind. It hurries the vapours to the heights of the atmosphere, and to the upper limit of the trade-wind, where they are condensed and fall down in a deluge of rain.

Now as the sun passes and repasses from one tropic to the other, it follows that there is in most intermediate places a twofold rainy season; the two periods of rain being more or less closely connected in point of time, according to the distance of the place from the tropic.

We may conceive the prodigious effect such violent showers must produce upon the rivers. We can understand the secret of the overflowings of the Nile, once so mysterious, which are due to the circumstance that the region of its sources receives the tropical rains.

Floods of forty feet and upwards are frequent at this season in the great rivers of South America; the Llanos of the Orinoco and for a time changed into an inland sea. The Amazon inundates the plains through which it flows for a vast distance. The Paraguay also forms lagoons, more than three hundred miles in length, which ooze away and evaporate during the dry season.

The quantity of water contained in the tropical atmosphere in the condition of transparent vapours, is always considerable. It is in proportion to the heat, which, being always very great, augments its capacity to a very high degree.

Even under the most serene sky, the air is still abundantly provided with vapour. It is this invisible water which, being absorbed by the plants and taken up by their large leaves, produces the vigorous vegetation, and causes the eternal verdure, that fills us with astonishment, under a sky devoid of rain, and cloudless during more than half the year; while in our climate, from the failure of rain for a few weeks only, we see all verdure languish, and all the flowers perish for the lack of moisture.

The winds of the ocean striking the coast of the continents and moistening them with their waters, penetrate into the interior, transport thither the vapours with which they are charged, and spread life and freshness on their path. But in proportion as they advance on their continental journey, they become more and more sparing of these beneficent waters; their provision at length becomes exhausted, and if the way is too long,—that is, if the continent is too extended,—they arrive at its interior, arid and parched, as a land wind.

However, there are circumstances which disturb or, rather, modify the general law; those circumstances are the form of relief* of the land, the mountain chains and the plateaux,† and their position in relation to the damp winds.

A wind laden with vapour may pass over vast continental plains without dissolving into rain, because the temperature of a plain may remain the same over long spaces, or perhaps be higher than that of the sea-wind which crosses it. There is then no agency to condense the vapours. We have an example of this in the Etesian winds, which bear the vapours of the Mediterranean into the Sahara. They have no other power, the threshold of the desert, than the dry and hot air dissipates every cloud.

But it is not the same when the moist winds meet

* Relief, relieve, raised, bulging surface.

† Plateau, level expanse.

elevated objects, such as chains of mountains and high table-lands, in their transit. Forced to ascend the mountain sides, they are uplifted into the colder regions of the atmosphere, they feel the diminished pressure of the air; their expansion further assists the cooling process, and the air loses that capacity for holding the same quantity of vapours as before. The vapours are condensed into clouds, which crown the summits of the mountains, hang upon their sides, and soon melt into abundant rains. If the sea-wind passes over the chain, it descends the opposite side, dry and cold, having lost all its marine character.

The mountain chains, then are the great condensers placed here and there along the continents, to rob the winds of their treasures, to serve as reservoirs for the rain waters, and to distribute them afterwards, as they are needed, over the surrounding plain. Their wet and cloudy summits seem to be untiringly occupied with this important work. From their sides flow numberless torrents and rivers, carrying in all directions wealth and life. Every system of mountains becomes the centre of a system of irrigation, which gives to its neighbourhood one of Nature's choicest gifts. From the operation of this power of condensation, there falls on the summits of the mountains more water than on their slopes, and at their foot more depends than on the adjoining plains. Besides, the side of the chain exposed to the sea-winds receives a quantity of rain much beyond that which falls on the opposite side, so that the great systems of mountains not only divide the water of the oceans, but separate different and most valuable climates.

SUNSHINE.—Rains are either periodic, as in the tropics, or variable as in the temperate regions. In the equatorial regions the year is divided into the dry and the rainy seasons. In the dry season, and in the high, the dry pressure of a constant serenity and a deep azure blue. In the wet season, the earth is inundated with torrents of rain, the great rivers overflow their banks, and vast plains are changed into inland seas, while even the barren

desert becomes animated and is overspread with luxuriant verdure.

The mountain chains are the great condensers of the moisture floating in the atmosphere. Their cloudy summits are continually occupied in robbing the winds of their treasures. These they husband in internal reservoirs, whence flow numberless torrents, carrying wealth and life to the surrounding plains. In this way each mountain system becomes a centre of irrigation, and frequently separates different and often opposite climates.

QUESTIONS.—Account for rains. What are the different kinds of rain? Contrast the dry and rainy season in the tropics. Why are mountainous countries generally moist? Why is there less rain in the interior of a continent than on the coast? Explain how it sometimes happens that the countries on either side of a mountain-range differ in climate. Why does rain contribute to the fertility of the soil?

—O— VIRTUE.

Sweet day! so cool, so calm, so bright
The bridal of the earth and sky,
The dew shall weep thy fall to-night,
For thou must die.

Sweet rose! whose hue, angry and brave
Hides the rash passion with his smile,
Thy root is ever in the grave,
And thou must die.

Sweet spring! full of sweet days and nights,
A box where sweets compacted lie,
Thy music shows, to those that love,
And all must die.

Only a sweet and virtuous soul,
Like season'd timber never fails;
But, though the whole world turn to coal,
Then chiefly lives.

* Compacted, closely packed.

† Given, tender and small.

THE WINDS.

Density, weight, heaviness.	Temperature, degree of heat or cold.
Experiment, trial, proof.	
Property, quality, peculiarity.	Alternating, occurring by turns.
Uninterrupted, unbroken, continuous.	Vacuum, empty space.

The winds are currents of air exactly the same in kind as those of the waters in rivers and in the seas. Every disturbance of the balance between neighbouring masses of air, an increase of density, and consequently of pressure on the one side, or a diminution of density on the other, immediately causes a movement from the heavier towards the lighter air; just as water is set in motion if it suffers a greater pressure on one side than on the other. The most usual and general cause of such disturbances of the balance of the air is *unequal heating*. The causes upon which the draught of our lamps, the burning of the fuel in our fireplaces, and the airing of our rooms depend, are the same as those which we find at work as the moving power of the slightest breezes and of the mightiest gales which stir the restless air and mingle it in every climate.

The air takes its heat, in the first place, chiefly from the ground; the warmed and so expanded air rises, and it is only in this way that the heat of the soil is spread over the higher regions of the atmosphere. Now, the soil is not everywhere equally heated. The degree in which it is favoured in this respect depends, as you know, greatly upon the situation and latitude of the place.

Besides this, certain substances have the property or absorbing more of the sun's rays than others can, supposing equal quantities of heat to fall upon both. Again, other substances allow the sun's heat to penetrate deeper, and thus, from the one cause or the other, the soil at different places takes a different temperature. Thus, during the day-time the temperature in the shade of trees,

of houses, and of clouds, in moist meadows and forests, and on surfaces of water, is usually lower than on dry soils, on rocks, on roofs, and on level plains.

The air which rises very quickly over the warmest parts of the soil, is replaced by air coming in from cooler places, and thus are caused those movements of the air which we generally find on the borders of forests, in the shade of trees, at the opening of or within shady mountain-glens, on the banks of rivers and lakes, and on the sea-shore. It is impossible that the air can flow from one place to another without being replaced by a movement in the opposite direction: for instance, by a return current in the upper regions of the atmosphere Nature abhors a vacuum.

The following experiment will clearly illustrate this. If a door be set ajar between two rooms, one of which is filled with cold air, the other with warm; and if now a lighted candle be held at the crevice, at different heights, one after another, you will remark that at the bottom the flame will be turned from the cold room into the warm; at the top it will be driven from the warm towards the cold room, and at some point near the middle height it will burn steadily upright. From this you will learn that there are two currents, one above the other, and in opposite directions.

Just the same process goes on in the open air, wherever neighbouring tracts of land have an unequal temperature, which they impart to the air that runs over them. In every hot summer's day there are streams of air mounting up from such spots on the soil as are most strongly heated: these currents carry, with them the moisture as well as the warmth of the ground, and they sink again over cooler places, such as surfaces of water and forests.

This is well shown by the periodic land and sea breezes, which on many coasts blow from the sea to the land by day, by night, from the land to the sea. If the land is more heated than the sea during the day, the air that is

over the land will mount upwards, and the cool sea air will flow into its place; the air, getting cooled in the upper regions, falls down again over the sea. During the night, the land is more cool than the surface of the water; the latter at last becoming warmer, the air flows from the land to the sea, while the sea air, now becoming lighter, mounts upwards.

This circulation may be compared to the turning of a wheel. If the temperature is equal, it stands still; if it become unequal, it turns, first towards one side, and then towards the other. Twice daily it stands still, when one of these movements is passing into the other.

Land and sea breezes occur in high latitudes only during the summer months; in tropical climates, however, they follow with the greatest regularity, and become of high importance to shipping. The sea-breeze springs up in the morning some time after sunrise, increases in strength till about two or three o'clock in the afternoon, and then gradually falls off. About the time of sunset a perfect calm prevails. Soon after, the land-wind gets up and blows with gradually increasing strength throughout the greatest part of the night, and begins to lull towards morning.

These alternating air-currents appear on all coasts within the tropics, even on those of the smallest islands; and they occur every day with perfect regularity, unless they happen to be turned from their true direction by other more powerful winds. The land and sea breezes are, for the most part, felt only at a small distance from the shore. On some far-stretching coasts, however, such as that of Peru, their influence reaches a great distance out to sea.

In the hottest zone of our earth, an uninterrupted current of warm air rises from over land and sea, and must be replaced from below; and thus a movement of colder air sets in from higher latitudes on both sides towards the equator. The air that has mounted up, now flows in the higher regions of the atmosphere on both sides to-

wards the poles, and as it gradually cools in its progress, falls, and reaches the earth again in the middle or higher latitudes. This is a circulation of the same kind as that presented on a far smaller scale by the land and sea breezes.

In the torrid zone, then, we find in the lower layers of the atmosphere, on both sides of the equator, polar winds—blowing from the poles to the equator—north winds in the northern hemisphere, and south winds in the southern, both of which, however, take a more and more westward direction as they approach the equator. These are called the *Trade-Winds*.

The air is in general moister over the sea than on land; least so, however, in the region of the trade-winds. It there flows from colder to warmer regions, and as the temperature gradually increases as it advances, its power of absorbing moisture is more and more enhanced. Within the region, therefore, of the trade-winds the atmosphere is clearer and rain scarcer. But between the north-east and south-east trades, in the belt of the calms, where the surface of the sea receives most warmth, and where, therefore, air fully charged with water is ever rising and spreading itself out, until cooled down by degrees below the dew-point, it rains regularly every afternoon.

The domain of the palms advances and retreats with the sun; the rainy season sets in wherever it comes; and the dry season where the trade-wind prevails. Between the two periods there is a regular interchange, so that the former always answers to the highest, and the latter to the lowest position, of the sun. Thus it rains in the West Indies during the summer months, and is dry during winter. In Brazil, however, the rainy season sets in at the same time as the dry season of the northern hemisphere, and conversely.

A great part of this summer rain is driven by the west wind of the upper regions into inland Africa. But since the belt of the calms in the Atlantic always remains

on the north side of the equator, it is chiefly on the parts of Africa lying in the north tropical zone that it rains in summer. The south-west of Africa, on the other hand, is remarkable for its extreme dryness. Over the parched soil, too, of Sahara, the atmosphere is seldom cooled down below the dew-point; there, then, it scarcely ever rains.

The lower trade, the dry wind, is met with in the summer, even to the north of the tropic. In the region, then, of the tropics, it is dry in summer; but in autumn the upper trade, the rain-wind, comes down gradually lower and lower, and reaches the earth in winter in the latitude of the Canary Isles. On the borders, then, of the torrid zone the rainy seasons answer to the lowest position of the sun.

On the north coast of Africa, too, and in the south of Europe, we find the *dry* alternating pretty regularly with the *wet* season; but the latter becomes shorter as the latitude increases, because the south-west wind reaches the ground the earlier the farther it goes north. In mid-Europe, there is no more of this regular setting in of a dry season: there rainy weather may come whenever the north-east or the south-west wind is prevalent.

Physics of the Earth.

SUMMARY.—Wind is air in motion, arising, as in the case of ocean currents, from inequalities of temperature. Winds are either *variable*, as in our climate; *periodic*, of which the land and sea breezes are a good example; or *permanent*, as in the trade winds. In the hottest zone an uninterrupted current of warm air rises from land and sea; consequently there is a movement of colder, and therefore denser air from the higher latitudes, on both sides, towards the equator. The air that has mounted into the higher regions flows out towards the poles, is gradually cooled in its progress, and reaches the earth's surface again in the middle or higher latitudes. It is this wind which constitutes the warm, moist, westerly gales so familiar to Europeans living on the Atlantic shores.

QUESTIONS.—What is wind? What causes the air to move? What are the different classes of winds? Give examples of each. Account for the prevalence of westerly winds in our climate. Name some of the uses of winds. Account for what are called land and sea breezes.

TRUE BROTHERHOOD.

It was upon a Lammás night
Two brothers woke and sail,
As each upon the other's weal
Bethought him on his bed.

The elder spake unto his wife,
'Our brother dwells alone,
No little babes to cheer his life,
And helpmate hath he none.

"Up will I get, and of my heap
A sheaf bestow or twain,
The while our Ahmed lies asleep,
And wots not of the gain."

So up he got and did address
Himself with loving heed,
Before the dawning of the day,
To do that gracious deed.

Now to the younger, all unsought,
The same kind fancy came,
Nor wist they of each other's thought,
Though movèd to the same

"Abdallah, he hath wife," quoth he,
"And little babes also;
What would be slender boot to me
Will make his heart o'erflow,

"Up will I get, and of my heap
A sheaf bestow or twain,
The while he sweetly lies asleep,
And wots not of the gain."

So up he got and did address
Himself with loving heed,
Before the dawning of the day,
To mate his brother's deed.

Thus played they oft their gracious parts,
And marvelled oft to view
Their sheaves still equal, for their hearts
In love were equal too.

THE INFLUENCE OF LAND AND WATER ON CLIMATE.

Fortuitous, accidental.
 Indentations, openings.
 Contour, outline, figure,

Aqueous, watery.
 Rotation, regular succession.
 Saturate, to soak.

I. LAND.

In physics, nothing is fortuitous, nothing unimportant. Everything depends on a law wisely designed to bring about certain results.

Is the question regarding forms of contour? Nothing characterizes Europe better than the number and variety of its indentations, of its peninsulas, and of its islands. Suppose, for a moment, that beautiful Italy, and Greece, with its entire Archipelago, were added to the central mass, and enlarged Germany or Russia by the number of square miles they contain; this change of form would not give us another Germany, but we should have an Italy and a Greece the less. Unite with the body of Europe all its islands and peninsulas into one compact mass, and instead of this continent, so rich in various elements, you will have a New Holland, with its dreary uniformity.

Do we look to the forms of relief? Is it a matter of indifference, whether an entire country is elevated into the dry and cold regions of the atmosphere, like the central table-land of Asia, or is placed on the level of the ocean? See under the same sky the warm and fertile plains of Hindostan, adorned with the brilliant vegetation of the tropics, and the cold and desert plateaux of Upper Tibet; compare the burning regions of Vera Cruz and its fevers, with the lofty plains of Mexico and its perpetual spring; the immense forests of the Amazon, where vegetation puts forth all its splendours, and the desolate summits of the Andes,—and you have the answer.

Let us look to relative position. Is it not to their position that the three peninsulas of the south of Europe

owe their mild and soft climate, their lovely landscapes, their relation to other countries, and their social life? Is it not to their situation that the two great peninsulas of India owe their rich nature, and the conspicuous part which one of them, at least, has played in all ages? Place them on the north of their continents, Italy and Greece become a Scandinavia, and India a Kamtschatka. Europe owes its temperate atmosphere to its position relatively to the great marine and atmospheric currents, and to the vicinity of the burning regions of Africa. Place it to the east of Asia, it would be a frozen peninsula.

Suppose that the Andes were transferred to the eastern coast of South America, so as to hinder the trade wind from bearing the vapours of the ocean into the interior of the continent, the plains of the Amazon and Paraguay would be nothing but a desert. In the same manner, if the Rocky Mountains bordered the eastern coast of North America, and closed against the nations of the east and of Europe the entrance to the rich valley of the Mississippi; or if that immense chain extended from east to west across the northern parts of the continent, and barred the passage of the polar winds which now rush southward unobstructed; or if, even preserving all the great present features of this continent, we suppose only that the interior plains were slightly inclined towards the north, and that the Mississippi ran into the Frozen Ocean, the relations of warmth and moisture, the climate, and with it the vegetation and the animals, would undergo the most important modifications; and these mere changes of form, and of relative position, would have an incalculable influence upon the destinies of human society.

It is, then, from the *forms* and the *relative situation* of the great masses of land, modifying the influence of the forces of nature, that necessarily flow all the great phenomena of the physical and individual life of the continents, and their functions in the great whole.

II. WATER.

It is important to mark the difference in those climates influenced by land, and those affected by the sea. This difference is owing substantially to the peculiar physical properties of the water and of the land. Water has a great capacity for heat, but a feeble conducting power. It becomes warm but slowly in the rays of the sun. The evaporation also being considerable, produces a cooling which farther tempers the heat received at the surface. The superficial layer thus becoming cool, the cooled molecules become heavy, sink down, and give way to the warmer molecules of the inferior strata.

Thus the heating and cooling are very gradual, and do not reach the extremes. The air itself, by its contact, shares in the uniformity of temperature which belongs to the surface of the waters, and which, combined with the abundance of vapours that saturate the atmosphere, gives to the *sea climate* its peculiar character.

It is quite different with the surface of the soil, of which the particles are fixed. The soil rapidly absorbs the solar rays; the superficial layer is the more heated, since it cannot be displaced, as in the water, by another, and it soon attains an elevated temperature. Again, for the same reason, the ground easily loses heat by radiation, whether during the nights or the cold days; and the loss is so much the greater, as the radiation is favoured by the inequalities of the surface, and the transparency of an atmosphere more dry, and less charged with clouds, than that which rests upon the sea. Hence, the lands removed from the influence of the oceans have a climate characterized by the extremes of cold and heat, by more violent changes, and a drier atmosphere. These are the essential features of the *continental climate*.

If we now observe the manner in which sea and land are affected with regard to their temperature, they being near each other, and receiving the same degree of heat from the sun, we shall see that the sea is colder than the land during the day, and warmer during the night. In

the same way, taking the different seasons of the year, in summer the sea is colder than the land, in winter it is warmer. It preserves the mean temperature, while the land experiences the extremes. It tends to soften all the differences, and to establish uniformity of climate.

The sea climate, then, is equable; it is also moist, and the sky often cloudy and rainy, in the high latitudes. The land climate is excessive, with violent changes, generally dry, and the sky usually clear.

It follows that the astronomical climate—that which is dependent on the latitude—is greatly modified by the presence or absence of the sea; and the distribution of heat through the year, for any place whatever, depends in no small degree on its proximity to, or its distance from, the ocean, and the consequent prevalence of the winds which blow from it.

Who does not see the powerful influence which such differences in the climatic conditions must exercise on all organized beings, and on vegetation in particular? While in green Ireland the myrtle grows in the open air, as in Portugal, without having to dread the cold of winter, the summer sun of the same climate does not succeed in perfectly ripening the pears, which grow very well in the same latitude on the continent. On the south of Cornwall and Devon, shrubs as delicate as the laurel or the camellia are green through the whole year in the gardens, in a latitude at which, in the interior of the continents, trees the most tenacious of life can alone brave the rigour of the winters. On the other hand, the mild climate of England cannot perfectly ripen the grape, almost under the same parallel as the slopes which produce the delicious wines of the Rhine. At Astracan, on the northern shore of the Caspian, Humboldt says the grapes and fruits of every kind are as beautiful and delicious as in the Canaries and in Italy; the wines there have all the fire of those of the south of Europe; while in the same latitude, at the mouth of the Loire, the vine hardly flourishes at all. And yet, to a summer

capable of ripening the southern fruits, succeeds a winter so severe, that the vine-dresser must bury the stock of his vines several feet in the earth, if he would not see them killed every year by the cold. It may be remembered that a part of the Russian army despatched for the conquest of Khiva—the region situated to the south of the sea of Aral—perished under the snows by cold of 20° below the zero of Fahrenheit, in a country situated under the same parallel as the Azores, where there reigns a perpetual spring; and where, in the midst of winter, the vegetation and the flowers display their most brilliant colours. It is in climates like that of Central Russia, that the camel, the inhabitant of burning deserts, and the reindeer of the frozen regions, meet together, and that nature seems to have brought together the climate of the poles and of the tropics.

On man himself the influence of a moist and soft climate makes itself felt, by a relaxation of the tissues, and a want of tonic excitement. The insular Polynesians, as those of Tahiti and others, exhibit the mild, easy, and careless character which seems to be naturally the result of such a climate.

The continental climate does not give to the vegetation an appearance of such exuberance; but the variety of the soil, the frequent alterations of plains, table-lands, mountains, valleys, and of different aspects, secure to it an almost infinite variety of different species and forms. The animals are more vigorous and larger, the species more numerous, the types more varied. The lion, the tiger, the elephant, all the kings of the brute creation, have never lived elsewhere than on the continents, or on islands once connected therewith. Man himself is more animated, more active, more intelligent, and endowed with a stronger will; in a word, life is more intense, and raised to a higher degree, by the variety and movement impressed upon it by the contrasts that form the very essence of this climate.

The ocean is the indispensable handmaid of the land.

The sun, the great awakener of life, shoots his burning rays every day athwart the face of the waters. He causes the invisible vapours to rise, which, lighter than the air itself, unceasingly tend to soar into the atmosphere, filling it and constituting within it another aqueous atmosphere. In their ascending movement, they encounter the colder layers of the higher regions of the atmosphere, which have a cooling influence. They are condensed in vesicles, which become visible under the form of clouds and fogs. Then, borne along by the winds, whether invisible still or in the state of clouds, they spread themselves over the continents, and fall in abundant rains upon the ground which they fertilize. All the portion of the atmospheric waters not expended for the benefit of the plants and of the animals, nor carried off anew into the atmosphere by evaporation, returns by the springs and rivers to the ocean whence it came.

Thus the waters of the ocean, by this over renewed rotation, spread themselves over the lands; the two elements combine, and become a source of life, far richer and much superior to what either could have produced by its own forces alone.

SUMMARY.—The comparative temperature of countries depends mainly on their proximity to, or distance from, the Equator. This general law is, however, greatly modified by local circumstances; such as, elevation, prevailing winds, and the presence or absence of the sea. Countries near the ocean partake of the uniformity of temperature which characterizes a *sea climate*. While inland countries are subject to greater extremes, more violent changes, and a drier atmosphere, which are the essential features of a *continental climate*. The position of its mountain ranges, the number and extent of its inland seas, as well as the general inclination of its surface, also tend to modify the climate of a continent. Owing to these modifying circumstances, countries situated in the same latitude have often the most diverse climate, while a comparatively slight alteration in contour would suffice to give a new character to the climate, productions, and inhabitants of a continent.

QUESTIONS.—Name causes which tend to modify climate? What are the characteristics of *sea climate*? In what respects is a con-

tinental climate different? Account for this difference. What are the effects of oceanic and continental climate on man? Give examples of countries in the same latitude varying greatly in climate. State the reason in each instance. Show that a slight alteration in the contour of a country would greatly modify its climate. Show by the Andes that mountains have a striking influence in climate. Why is the ocean necessary to the land?

THE FOUNTAIN

Into the sunshine, full of light,
Leaping and flashing from morn till night.

Into the moonlight, whiter than snow,
Waving so flower-like, when the winds blow!

Into the starlight, rushing in spray,
Happy at midnight, happy by day!

Ever in motion, blithesome and cheery,
Still climbing heavenward, never a weary;

Glad of all weathers, still seeming best,
Upward or downward, motion thy rest;

Fall of a nature nothing can tame,
Changed every moment—ever the same;

Ceaseless aspiring, ceaseless content,
Darkness or sunshine thy element.

Glorious fountain, let my heart be
Fresh, changeably constant, upward like thee

Lowell.



POWERS OF THE AIR AND WATER.

Spherical, like a ball.

Superincumbent, overlying.

Gossamer, silky film.

Impalpable, unsubstantial.

Abrading, rubbing away.

Triturating, reducing to powder.

We have already said that the atmosphere forms a spherical shell, surrounding the earth to a height which is unknown to us, by reason of its thinness increasing as it is released from the pressure of its own superincumbent mass. Its upper surface cannot be nearer to us than fifty, and can scarcely be more remote than five hundred, miles. It surrounds us on all sides, yet we see it not, it presses on us with a load of fifteen pounds on every square inch of surface of our bodies, or from seventy to one hundred tons on us in all, yet we do not so much as feel its weight.

Softer than the finest down, more impalpable than the finest gossamer, it leaves the cobweb undisturbed, and securely sustains the lightest flower that feeds on the dew it supplies, yet it bears the fleets of nations on its wings around the world, and crushes the most stubborn substances with its weight. When in motion, its force is sufficient to level with the earth the most stately forests and stable buildings, to raise the waters of the ocean into ridges like mountains, and dash the strongest ships to pieces like toys.

It warms and cools by turns the earth and the living creatures that inhabit it. It draws up vapours from the sea and land, retains them dissolved in itself or suspended in cisterns of clouds, and throws them down again as rain or dew, when they are required. It bends the rays of the sun from their path to give us the aurora of the morning and twilight of evening; it disperses and refracts their various tints to beautify the approach and the retreat of the glorious sun.

But for the atmosphere, sunshine would burst on us in a moment and fail us in the twinkling of an eye, removing us in an instant from midnight darkness to the blaze of noon. We should have no twilight to soften and beautify the landscape, no clouds to shade us from the scorching heat; but the bald earth, as it revolved on its axis, would turn its tanned and weakened front to the full, unmodified rays of the lord of day.

The atmosphere affords the gas which vivifies and warms our frames; it receives into itself that which has been polluted by use, and is thrown off as noxious. It feeds the flame of life exactly as it does that of the fire. It is in both cases consumed, in both cases it affords the food of consumption, and in both cases it becomes combined with charcoal, which requires it for combustion, and which removes it when combustion is over.

It is the girdling, encircling air that makes the whole world kin. The carbonic acid with which our breathing fills the air, to-morrow seeks its way round the world. The date-trees that grow round the falls of the Nile will drink it in by their leaves; the cedars of Lebanon will partake of it to add to their stature; the cocoanuts of Tahiti, and the palms and bananas of Japan will acquire from it new freshness and vigour.

The oxygen we are breathing was distilled for us some short time ago by the magnolias of the Susquehanna and the great trees that skirt the Orinoco and the Amazon; the giant rhododendrons of the Himalayas contributed to it; and the roses and myrtles of Cashmere, the cinnamon-tree of Ceylon, and the forest, older than the flood, that lies buried deep in the heart of Africa, far behind the Mountains of the Moon, gave it out. The rain we see descending was thawed for us out of the icebergs which have watched the Polar Star for ages, or it came from snows that rested on the summits of the Alps, but which the lotus lilies have soaked up from the Nile, and exhaled as vapour again into the ever-present air.

There are processes no less interesting going on in other parts of this magnificent field of research. Water is Nature's carrier with its currents it conveys heat away from the torrid zone and ice from the frigid, or, bottling the caloric away in the vesicles of its vapour, it first makes it impalpable, and then conveys it, by unknown paths, to the most distant parts of the earth. The materials of which the coral builds the island, and the sea-conch its shell, are gathered by this restless leveller from mountains, rocks, and valley, in all latitudes.

Some it washes down from the Mountains of the Moon, or out of the gold-fields of Australia, or from the mines of Potosi, others from the battle-fields of Europe, or from the marble quarries of ancient Greece and Rome. The materials, thus collected and carried over falls or down rapids, are transported from river to sea, and delivered by the obedient waters to each insect and to every plant in the ocean at the right time and temperature, in proper form and in due quantity.

Treating the rocks less gently, it grinds them into dust, or pounds them into sand, or rolls and rubs them until they are fashioned into pebbles, rubble, or boulders; the sand and shingle on the sea-shore are monuments of the abrading, triturating power of water. By water the soil has been brought down from the hills and spread out into valleys, plains, and fields for man's use. Saving the rocks on which the everlasting hills are established, everything on the surface of our planet seems to have been removed from its original foundation and lodged in its present place by water. Under every form, in every capacity, water, whether fresh or salt, solid, fluid, or gaseous, is marvellous in its powers.

It is one of the chief agents in the manifold workshops in which and by which the earth has been made a habitation fit for man — *Mauvy*.

SUMMARY—The atmosphere surrounds the earth to an incalculable height, and, though invisible, its pressure amounts to fifteen pounds on the square inch. It wafts the flocks of the nations from clime to clime, and, slowly but surely, wears away the hardest rocks and metals. The atmosphere, at once and the same time, warms and cools the earth; suspends moisture in its cloudy cisterns till the parched earth requires a fresh supply; and modifies the violence of the sun's rays. It absorbs all poisonous gases, such as carbonic acid, and furnishes us with pure oxygen, without which everything would die.

QUESTIONS—What is the amount of pressure of the atmosphere? What are its advantages? Mention its chief constituents.

THE RECONCILIATION.

As through the land at eve we went,
And plucked the ripened ears,
We fell out, my wife and I;
Oh, we fell out, I know not why,
And kissed again with tears.

For, when we came where lies the child
We lost in other years,
There, above the little grave
Oh, there, above the little grave,
We kissed again with tears.

A. Tennyson.

THE ADAPTATION OF PLANTS TO THEIR NATIVE COUNTRIES.

Spontaneous [L., *spontaneus* — *spontis* and *sponte* = of one's own accord, willingly, voluntarily, *adj.*, of one's own free will; voluntary; acting by its own impulse; produced of itself or without interference.

Exhilarating [L., *exhilaro* (*exhilaratus*), I gladden, make merry or joyous, rejoice, delight — *ex*, intensive, and *hilare*, I make cheerful, cheer — *hilaris*, cheerful, lively, gay, blithe, merry,

jocond, jovial], *pr. p.* and *adj.*, making merry; cheering; gladdening.

Coriaceous [L., *corium*; Gr., *chorion*, skin, hide, leather], *adj.*, leathery; of or like leather.

Ligneous [L., *ligneus*, of wood, wooden — *lignum*, wood], *adj.*, wooden; woody; made of wood.

Esculent [L., *esculentus*, from *esca*, food, from *edo*, I eat], *adj.*, edible, eatable.

“A hundred thousand species of plants upon the surface of the earth!” you exclaim. Yes; and, what is more surprising still, every one of these species has its *native country*. The wisdom and goodness of God are indeed no less manifested in the geographical distribution, than in the curious process observable in the vegetation, the wonderful structure, and other peculiarities of plants.

We have not room to multiply instances. But where, it may be asked, could the dense woods which constitute the Brazilian forest be more appropriately situated? Where could the delightful vistas, and pleasant walks, and refreshing arbours, of the many-trunked *Banian-tree* be better placed? Where could that numerous host of natural umbrellas, the family of the palms, which overshadow, with their luxuriant and projecting foliage, almost every island, rock, and sandbank, between the tropics, display their cooling shades with better effect?

Where, in short, could that wonderful exuberance of the earth's bounty, the *Bread-fruit Tree*, by which, in the

words of Captain Cook, "if a man plant but ten trees in his whole lifetime" (and that he may do in an hour). "he will as completely fulfil his duty to his own and to future generations, as the natives of our less temperate climate can do, by ploughing in the winter's cold, and reaping in the summer's heat, as often as the seasons return:"—where, I say, can this exuberance be more beneficially manifested, than in those regions where "the same glowing beams of the sun that raise the plant into a shrub, and the shrub into a tree," render the gloom of the forest, and the intervening screen of the overhanging foliage, so desirable,—where the least exertion becomes oppressive, and coolness and ease may be said to constitute the principal wants of the inhabitants?

And where, it may be further inquired, could those immense fields, upon which are raised our various crops of corn be better made to expand their extensive surfaces, and lay open their treasures to the influence of the sun, than in those temperate regions of the globe, where, instead of being hurtful, a moderate degree of labour is conducive to health, and the agricultural labourer goes forth to his work in the morning, and returns in the evening, rather invigorated than exhausted, by the ordinary occupations of the day?

If we extend our views much farther to the north, we may in vain look for the spontaneous luxuriance of the torrid zone, or the golden-coloured fields of the intervening climates; but here we shall find, what is at once more suitable to the climate and the wants of its inhabitants, a plentiful supply of the *Rein-deer Lichen*, which, being formed by nature to vegetate beneath the snow, is there found out in requisite abundance by that useful creature whose name it bears, and which is of itself a treasure to the inhabitants of those regions.

The esculent properties of the *Iceland Moss* are now beginning to be better understood; and in what part of the habitable world could this singularly nutritious

vegetable have been more judiciously and mercifully made to abound, than in that island of wonderful contrasts, where the variable climate is often so unfavourable to vegetation of a larger growth, and the hopes of the husbandman are so repeatedly disappointed by unwelcome visitants, in the form of icy particles floating in the air?

The *Pitcher-plant* of the eastern, and the *Milk* or *Cow-tree* of the western world, may each of them be reckoned among nature's wonderful contrivances, and be justly regarded as evidences of the wisdom and goodness of the Being who knows so well how to proportion the acts of His bounty to the necessities and wants of His creatures.

The singular appendages which form the extremities of the *Pitcher-plant* are so many urns, containing a clear, wholesome, and well-tasted water. In the morning the lid is closed, but it opens during the day, when a portion of the water evaporates: this, however, is replenished in the night, and each morning the vessel is full and the lid shut. As this plant grows in saltry climates, and is found in the island of Java in the most stony and arid situations, how welcome and exhilarating must the sight of it often be to the weary traveller; and, from the marks of teeth upon the vessel, "it is evident that beasts often supply their wants at the same plenteous source."

The *Milk-tree* or *Cow-tree*, so called on account of the resemblance its singular juice bears to the milk of animals, in the place of which M. Humboldt has seen it used for every domestic purpose, is thus described by that enterprising traveller:—"I confess that, among the great number of curious phenomena I have observed in the course of my travels, few have made a stronger impression on my mind than that of the *Cow-tree*. On the barren declivities of a rock grows a tree, whose leaves are dry and coriaceous; its thick liguous roots scarcely enter the rock; for several months in the year rain scarcely waters its fan-shaped leaves; the branches

appear dry and dead; but, when an incision is made in the trunk, a sweet and nutritious milk flows from it.

"It is at the rising of the sun that the vegetable liquid runs most abundantly,—then the natives and negroes are seen to come from all parts, provided with vessels to receive the milk, which becomes yellow, and thickens at the surface. Some empty their vessels under the same tree; others carry them home to their children. It is like a shepherd distributing to his family the milk of his flock. If those who possess these precious trees near their habitation drink with so much pleasure their beneficent juice, with what delight will the traveller who penetrates these mountains appease with it his hunger and thirst!"

Popular Philosophy.

NATURE'S PROVISION FOR THE PRESERVATION OF ANIMALS.

Rodentia [L., *rodens, rodentis*, pr. p. of *rodo*, I gnaw], n., gnawers; an order of quadrupeds, including rats, mice, squirrels, beavers, etc., having two large incisor (cutting) teeth in each jaw, separated from the molar (grinding) teeth by an empty space.

Mutual [Fr., *mutuel*; L., *mutuus*, borrowed, lent; reciprocal, mutual—*mutuum* (n. abst.) = reciprocity, exchange of good offices, etc. — *mutuus* (adv.) = by turns, mutually], adj., in return; given and received; reciprocal.

Punctually [Fr., *punctuel*, punctual; Prov., *punctal* — L., *punctus*, a point], adv., at the exact point of time; accurately, exactly.

Diminution [L., *diminutio* or *diminutio*, a lessening, decrease, abatement—*diminuo* (frequently, *diminuo*), I lessen by taking something away; I make smaller, diminish (distinguish from *diminuo*, I dash to pieces)—*de* or *di*, and *minuo*, I lessen—*minus*, less], n., a diminishing or lessening, decrease.

We find that every species of animal is provided with the instruments best suited for obtaining, and devouring,

and digesting, the food which its nature requires, and is also furnished with the means of self-defence.

Animals, such as cattle, which feed on grass and grain (hence called *graminivorous* animals) have broad, flat teeth, with alternate ridges of bone and enamel, suited for grinding their food. Those of them which *ruminate* have several stomachs adapted for that purpose; but as their food lies beneath their feet, they do not require the assistance of their limbs to lay hold of it: their legs and feet are therefore formed only to support and move about their bodies, though the hoof sometimes serves as a weapon of defence, as with the horse. Some ruminant animals have horns for their defence, others butt with the head.

The claw of the beast of prey is admirably formed for seizing and holding his prey, while he has sharp and strong teeth for tearing and crushing it. If you have seen a cat (which, though it looks so meek and mild, is of the tiger and lion kind) fall on a poor little mouse, you may imagine how the tiger seizes on a deer or goat.

Animals such as hares, and rabbits, and mice (the *rodentia* tribe), have teeth suited for nibbling, which is their mode of feeding. The snout of the pig and tapir is formed for burrowing, and digging up the roots they feed on. You all know what quick havoc a pig will make in a potato ground.

These are a few examples of the provision for the support and protection of animals which has been made by Providence in the formation of their bodies.

But it would be all of no avail if they were not also endowed with intelligence. Cattle would in vain be provided with teeth to grind, and stomachs to digest, and food beneath their feet to eat, if they had not sense to choose the wholesome, and reject the unwholesome, herbs of their pasture. Beasts of prey would in vain be supplied with claws to seize and teeth to tear, if they had not sagacity to direct them how to take their prey.

This intelligence or sagacity which brutes possess is called *instinct*.

The instinct of beasts of prey, such as the lion and tiger, directs them chiefly in the capture of their food. This food being flesh, and often the flesh of animals superior in size to themselves, they do not trust altogether to their own strength, but they lie in wait for their prey in the dusk of the evening; or they crouch down in the day-time near some piece of water where they know that cattle and deer come down to drink and suddenly spring upon them, perhaps from a distance of twenty feet.

Sometimes the instinct of the lion leads him to terrify his victims by that roar which is so well known, or by a still more awful growl which he makes, putting his head on the ground so that the sound is conveyed along the earth, and rouses up the cattle and deer who are feeding in the plain, and to whom it is so terrible that they run to and fro in their fright, and become an easy prey.

The instinct of some beasts of prey leads them to hunt by the scent. Dogs, wolves, and jackals do this. They hunt in packs, by which means they have a great advantage over enemies much stronger than themselves.

But there is an instinct for self-defence, as well as for attack. Cattle and deer know how to protect themselves from their enemies. At any alarm they assemble, and form a band against the invader. The instinct of the horse leads him to kick with his hind legs, and he has often thus come off victorious against the lion himself. The instinct of the deer leads them to take to the water in extremity of danger, and crouch in it with only their noses above; thus the scent is lost to their pursuers.

Goldsmith.

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THE RAINY SEASON IN INDIA.

Roads, where ships ride at anchor.	Repercussion, the act of driving back.
Premontory, giving warning.	Omnipotent, all-powerful.
Vortices, whirlwinds, or whirlpools.	Phenomenon [plw a], extraordinary appearance, a feature of nature.
Reservoir, receptacle, tank.	

On the 15th of October the signal was given for all vessels to leave the (Madras) roads, lest they should be overtaken by the storm. On that very morning some premontory symptoms of the approaching "war of elements" had appeared.

As the house which we occupied overlooked the beach, we could behold the setting in of the rainy season in all its grand and terrific sublimity. The wind, with a force which nothing could resist, bent the tufted heads of the tall, slim cocoa-nut trees almost to the earth, flinging the light sand into the air in eddying vortices, until the rain had either so increased its gravity, or beaten it into a mass, as to prevent the wind from raising it.

The pale lightning streamed from the clouds in broad sheets of flame, which appeared to encircle the heavens as if every element had been converted into fire, and the world was on the eve of a general conflagration, whilst the peal, which instantly followed, was like the explosion of a gunpowder magazine, or the discharge of artillery in the gorge of a mountain, where the repercussion of surrounding hills multiplies with terrific energy its deep and astounding echoes.

The heavens seemed to be one vast reservoir of flame, which was propelled from its voluminous bed by some invisible but omnipotent agency, and threatened to fling its fiery ruin upon everything around. In some parts, however, of the pitchy vapour by which the skies were by this time completely overspread, the lightning was seen only occasionally to glimmer in faint streaks

of light, as if struggling, but unable to escape from its prison, igniting, but too weak to burst, the impervious bosoms of those capacious magazines in which it was at once engendered and pent up. So heavy and continuous was the rain, that scarcely anything, save those vivid bursts of light which nothing could arrest or resist, was perceptible through it. The thunder was so painfully loud, that it frequently caused the ear to throb, and it seemed as if mines were momentarily springing in the heavens.

The surf was raised by the wind and scattered in thin billows of foam over the esplanade, which was completely powdered with the white feathery spray. It extended several hundred yards from the beach; fish, upwards of three inches long, were found upon the flat roofs of houses in the town during the prevalence of the storm. They had been either blown from the sea by the violence of the gales, or taken up in the water-spouts which are very prevalent in this tempestuous season.

I have mentioned the intense loudness of the thunder, but between its pauses, as the hurricane increased, the roaring of the surf was scarcely less loud, so that there was an unceasing uproar, which to those who lived near the beach was most distressing, though the sublimity of the scene fully compensated for any annoyances which were induced by this fierce collision of the elements.

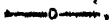
During the extreme violence of the storm the heat was occasionally almost beyond endurance, particularly after the first day or two. Then the wind would at intervals entirely subside, so that not a breath of air could be felt, and the punka afforded but a partial relief to that distressing sensation which is caused by the oppressive stillness of the air.

This was not our only inconvenience; insects of all kinds crept along the walls, and the most disagreeable reptiles crawled over our floor. Legions of ants, cockroaches, and lizards, were forced from their dark recesses by the torrents, and absolutely invaded us. Scorpions,

toads, centipedes, and even snakes, made free entrance into our apartments.

Day after day, for the space of two months, the same scene was repeated with somewhat less violence, though at intervals the might of the hurricane was truly appalling.

There are no doubt many parts of the world where, during the presence of hurricanes, the wind is more impetuous than during these periodical visitations in India, but in none, I will venture to say, does the rain pour in such a mighty deluge, and in no place can the thunder and lightning be more terrific.



POLITICAL ECONOMY.

WHAT IS MONEY?

<p>Exhilarating, cheering, enlivening. Opulence, wealth, riches. Peremptory, prompt, decisive. Denunciation, reproach.</p>	<p>Disparagement, depreciation. Temperament, constitutional peculiarity.</p>
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Economic science is the science of WEALTH. What then do economists mean by wealth? Assuredly not money, as Mr. Ruskin has complained. Assuredly not great individual opulence, as too many think. They mean, in brief and simple phrase, the possession by the community of abundance of the necessaries, comforts, and refinements of life. Hence, Adam Smith entitled his great work "The Wealth of Nations." "Wealth in the gross," says Mr. Hippolyte Passy, "is the possession of those things by means of which humanity satisfies its wants; and the more these things abound, the greater is the sum of wealth." "Wealth," says Mr. Joseph Droz, "is all those material goods which supply the needs of men. A state is rich when those goods are widely diffused." "In estimating the wealth of a nation," says Archbishop Whately, "we must be careful (1) To bear

in mind the condition 'in proportion to the population', (2) Not to compute it according to that of the richest individuals it may contain." Wealth then, which literally means *well* or *well-being*, denotes general well or well-being, in the limited sense now explained; of the relation between this and other forms of well-being I will hereafter speak. Meantime I would say, in the words of Dr. Chalmers:—

"Short of the question which touches the good of their immortality, we know none more interesting than those which bear on the temporal well-being of the people; and we cannot imagine a more deeply important inquiry relative to any interest on this side of death than how to elevate, by means of well paid industry, the general platform of humble life, so that the ground-floor of the social and political edifice shall be overspread with a well conditioned population."

If this is the case, how thoughtless, and foolish, and mischievous, must appear to us the expressions of disparagement and contempt we so often hear of wealth, or of money, which is so commonly and naturally taken as the type of wealth—expressions which, coming as they so often do from those who have it in abundance, or at least sufficiency, sound strangely in the ears of those who have it not, and whose sad hourly experience contradicts the tenour of the denunciation. "Moralist," says the *Scotsman*, "tell us that gold is dirt,—dirt, by the way, with which the moralists who profess to turn up their noses at it have no objection to soil their fingers, demanding payment for their very denunciations of it."

"Money," says the *Times*, "that some affect to despise, means food, clothes, health,—nay, life itself; power to be honest, power to be just, power to be merciful." "Everybody admits," says Mr Arthur Helps, "that money is the source of all evil, and everybody tries to get as much money as he or she can. Of course, seriously speaking, wealth is a good thing. That we should have plenty of corn, of coal, of wool, of cotton, and of cattle, is before all

things necessary." Mr. Charles Rando makes one of his personages in "Hard Cash" say:—"When I said I hated money, my brother asked me directly, 'Did I hate clothes, food, charity to the poor, cleanliness, and decency?' Then I don't hate money, said he, for none of these things can exist without money, you little romantic humbug." "Moralists," says Sidney Smith, with his usual horror of cant, "tell you of the evils of wealth and station, and the happiness of poverty. I have been very poor the greater part of my life. I believe I have borne the ills of life as well as most people; but I can safely say that I have been happier for every guinea I have gained."

In a similar spirit writes the genial Charles Lamb: "Goodly legs and shoulders of mutton, exhilarating cordials, books, pictures, the opportunities of seeing foreign countries, independence, a man's own time to himself, are not *rubbish*, however we may be pleased to scandalise with that title the faithful metal that provides them for us." "Frugality," says Dean Swift, "may be termed the daughter of providence, the sister of temperance, and the parent of liberty. I have no other notion of economy than that it is the parent of liberty and ease; and I have made it a maxim, that a wise man ought to have money in his head, but not in his heart."

"It is the provident man," says the Rev. Hugh Stowell Brown, "who can afford to be the generous man. It is he who helps himself that is able to help his poor and distressed neighbour; and if I advocate and urge thrift and economy, I do so not on merely selfish grounds, but in order that you may have the great happiness of doing good." "When I speak of contempt of money," says George Sand, "I mean the opulence that is coveted, sought, pursued, and purchased at any price, not *that* sacred thing, the wages that I am proud to earn. This is the guarantee of honour, and *that* it is one's duty to seek. Even luxury, when it comes in the train of a well-

spent life, does not inspire me with that philosophic disdain which always hides a little envy." "Though," says J.B. Say, "we did not seek wealth for our own enjoyment, we ought to seek it for virtue's sake. We ought not to be reduced to take counsel of want." "To most dispositions," says the author of the "Pilgrim and the Shrine," "adversity is more demoralising than prosperity." "Mark this!" says Lord Lytton, "never treat money affairs with levity. Money is character!" And again: "Beware of debt, and never call that economy meanness which is but the safeguard from mean degradation." "Nothing," says Mr. Henry Taylor, in his admirable "Notes from Life," "breaks down a man's truthfulness more surely than pecuniary embarrassment."

"An unthrift was a liar from all time,
Never was debtor that was not deceiver."

"The subject of economy," says Emerson, "mixes itself with morals, inasmuch as it is a peremptory point of virtue, that a man's independence is secured. A man in debt is so far a slave." "If you boast of a contempt of the world," says Douglas Jerrold, "avoid getting into debt. It is giving to gnats the fangs of vipers." "I think," says Dr. George Macdonald, "the old man of the sea, in 'Sinbad the Sailor,' must personify debt." "Debt," says Victor Hugo, "is the beginning of slavery. A creditor is worse than a master; for a master possesses only your person, a creditor possesses your dignity, and can spurn it with a blow." "The Dutch," says Chamfort, "have no pity for those who are in debt. They think that every debtor lives at the expense of his fellow citizens if he is poor, and of his heirs even if he is rich." When Fielding, the novelist, rather boastingly avowed that he never knew, and believed he never would know, the difference between sixpence and a shilling, he was told: "Yes, you will, when you have only eighteen pence left." But this same Fielding has said: "Whenever a man's expense exceeds his income, he is indifferent as to the degree."

Mr. Ruskin has said: "Sins of passion, if of real passion, are often the errors and backfalls of noble souls; but prodigality is mere and pure selfishness, and essentially the sin of an ignoble or undeveloped creature, and I would rather, ten times over, hear of a youth, that he had fallen into any sin you choose to name, than that he was in the habit of running bills which he could not pay." The once too famous Dr. Dodd has left us this testimony. "I never knew or attended to the calls of frugality, or the needful minuteness of painful economy. Vanity and pleasure, into which I plunged, required expense disproportionate to my income; expense brought distress upon me; and distress urged me to temporary fraud." Lastly, Mr. Micawber, whose peculiar experience adds unusual weight to his teaching, has declared: "If a man had £20 a year for his income, and spent £10 19s. 6d., he would be happy; but if he spent £20 1s. he would be miserable."

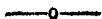
These passages, and not least the phrase which I have cited with peculiar pleasure from Lord Lytton, "*MONEY IS CHARACTER*," are full of wholesome warning to the many, especially to the young, who think it a proof of spirit, of noble disinterestedness, of a poetical temperament, of superiority to "grovelling cares," to enter at economy, at money. Foolish conduct follows in the train of foolish speech; and the first step to degrading dependence upon others, if not to actual dishonesty, is the neglect of that without which neither present nor future obligations can be met. I have watched more than one such downward career—from heroic contempt of money to the bitter sense of the need of it; from that to debt; from debt to recklessness of engagements and loss of character and self-respect; from that to utter ruin and disgrace.

Dr. W. B. Hodyson.

SUMMARY—By wealth economists mean, not great individual opulence, but the possession by the community of the necessities, comforts, and refinements of life in abundance. Expressions in

disparagement or contempt of wealth are thoughtless, foolish and mischievous. Frugality may be termed the daughter of providence, the sister of temperance, the parent of liberty, and backbone of character. Expense disproportionate to income must lead to distress, and distress often ends in dishonesty or a degrading dependence on others.

QUESTIONS.—What do economists mean by wealth? Why is it foolish to speak contemptuously of wealth? Cite the opinion of the *Times*. What does Charles Lamb say money represents? What does Dean Swift say of frugality? Why should frugality be commended, and debt avoided? Name some of the results of extravagance. What does Mr. Ruskin say on this point? How has Lord Lytton defined money? Explain this.



WHAT IS CAPITAL?

Confiscated, seized. Forego, to give up, to resign. Facilitate, make easy.	Emulation, rivalry, competition. Co-operate, to work together. Accumulated, collected together.
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That portion of wealth which is appropriated by its possessors to the production of more wealth is called capital; a large part of which, as may be seen, consists of tools, machines, roads, and other instruments whereby labour may be made more productive. Another part consists of means of procuring or buying labour, such as the ordinary necessities and comforts of life and the materials ready to be converted into them. This may be termed the wages fund.

The possessors of capital are called capitalists.

That portion of capital received by labourers, and paid to them by capitalists for their services, is called wages.

The increase expected, and eventually obtained, by the employers of capital is called profit.

Where some of the capital employed is lent by its possessor to the capitalist who employs it, the borrower taking the risk as well as the labour of its employment, the payment which the borrower makes to the lender for the

use of his capital is called interest. The borrower, of course, expects to obtain a rate of profit more or less beyond the rate of interest which he engages to pay, whether he actually earns a profit or not. The lender is content to forego all claim to the uncertain future profit, however large it may be, for the sake of a certain, though moderate, rate of interest.

You must try to keep clear of confusion when you hear wealth, capital, wages, profit, and interest, spoken of as so much money. A capitalist is said to be worth money, the labourer receives his wages in money, the employer measures his profit in money, and the payment which he makes for a loan of capital is called interest of money. When once the thought has been suggested, there cannot be great difficulty in bearing in mind that whatever form capital may be made to assume in order to earn profit, that form must not be money; but, if money, only to a very small extent, for convenience sake. Wages are received in money; but it is not the money, but what the money will enable the labourer to buy, which constitutes his real wages—what he can consume, and what he can save, so as to form a capital for himself. The little money that he may keep by him is for the purpose of spending or consuming at the most convenient time, and in the most suitable way. He lends what he saves in the form of money; but the first thing that the borrower does with it, in order to earn a profit, is to change it for something else, or lend it to another capitalist, who will make such an exchange.

Capital does not necessarily belong to individuals. It may belong to communities, or to the public at large. In its simple character—the produce of past labour accumulated to facilitate future labour—it assumes, as we have just seen, a variety of forms. The most valuable capital sometimes possessed by a country is cultivated ground. The water has been drained and the stones have been carried away by the ancestors of those now living on it. Thus, many difficulties having been removed,

they have only to manure, plough, and reap. Roads, bridges, harbours, and railways, are all so much capital. They have been produced by past industry, and they render future industry easier.

There can be no doubt that the possession of capital in a country is a great blessing to the people, whoever may possess it. People sometimes speak of it as if it were a means of tyranny and injustice; but the laws of a free country will not allow it to be used for such purpose. It is said that the capitalist enriches himself without caring for others. This may be true; but in the very process of enriching himself, his capital does good to others, if they act industriously and wisely. People own this sadly enough, when by their conduct they drive capital away, as they sometimes do. The owner of a cotton mill may be conducting it with great advantage to himself; but, if he is compelled suddenly to stop, the loss will fall on many others. Many families will be deprived of bread, until capital restores some other work for them.

Thus it is the interest of all that capital should be well protected and saved from disturbance. Wherever there is danger of its being confiscated or destroyed, it takes alarm and flies away; hence, in the wretched Eastern states, where every rich man is liable to be pillaged by the government, capital will not remain. Revolutions and civil convulsions are very much against it, as the unfortunate French have felt to their cost.

The workman sometimes grumbles because he works hard and is poor, while the owner of capital works little and is rich: he is sometimes mistaken about the working, as the management of capital is often a very hard task. But the fact of the capitalist being rich can do him no harm, since it does not make the workman the poorer; on the contrary, it supplies him with facilities for procuring good and constant employment. Perhaps the capitalist has made his money by his own hard labour;

perhaps his father or his grandfather has made it, and left it to him. At all events, it is his property; and to deprive him of it would be precisely as just as it would be to deprive the workman of his hands or tools.

The uneducated think that their wages do not represent a sufficient share of the general produce. It is however beyond the power of the capitalist to make an unfair division. If there were only one in a country employing all the people, he might dictate his own terms; but there are, especially in this country, a great number of capitalists, all competing with each other. If one wants to have too much profit, then another will be content with less, and offer more wages. It is not in the power of the capitalist to keep wages below their market value.

It is a great advantage in some cases that the workman should be also the capitalist: this is the case especially where there is much skill required to produce fine kinds of work. Day wages are not always an inducement to sufficient perseverance and emulation: hence, co-operative establishments, such as those at Rochdale, have been found suitable; but it is not by undermining capital that they succeed, but by the possession of it. In some humbler occupations too, the union of small capitals has been found to work well; The Swiss mountaineers have small patches of sweet meadow grass, and they keep fine cows; but each has so few that he could not keep a good dairy for making cheese, as this can only be done on a large scale. Several persons however enter into partnership, and appoint a skilful dairyman; and thus they make cheeses celebrated all over Europe for their excellence.

Capital is, as we have seen, something saved out of the produce of past labour. Since it is so very useful, the world is greatly indebted to him who so labours and saves. It is an occupation to be held up to the admiration and example of all. It does not follow that it ought to be done unjustly or oppressively, nor should it be

done to the neglect of other duties. A man who neglects to educate his family, in order to leave a fortune in their hands, makes a miserable investment of capital. He leaves them a powerful engine, which they do not know how to use, and they are more likely to apply it to destruction than to usefulness.

Since the conduct of him who creates capital is so beneficial, how contemptible is that of him who, on the other hand, squanders the capital which others have made! The money spent by the spendthrift being devoted to pleasure and vice, very little of it does the world any good. It becomes exhausted, as the wine he drinks, and the horses he rides, are exhausted. But the money spent by the capitalist, after feeding workmen and encouraging industry, comes back increased, to be spent in the same useful shape.

And yet the thoughtless part of the world are apt to look with contempt on the man who is making a fortune, or devoting it to good purposes, and to give their admiration to the spendthrift, who is dispersing what others have brought together. They look upon the one as sordid, the other as generous; sometimes considering that the extravagant man shows himself, by his very extravagance, to be a person of higher mark than the industrious and saving man. This feeling even subsists after the spendthrift has exhausted all his means; and men foolishly look with respect on him for the fortune he has run through.

Ellis and Chambers.

SUMMARY.—Wealth, appropriated by its possessor to the production of more wealth, is called capital. Profit and interest are different kinds of payment for the use of capital. The most valuable capital possessed by a country is cultivated land produced by past industry, thus rendering future industry easier. As the possession of capital is a great blessing to a country, the man who accumulates capital is a public benefactor; while the spendthrift, who only squanders his capital, should be despised rather than admired. Pay wages are not always a sufficient inducement to perseverance and emulation; hence co-operative establishments

are sometimes formed, in which the workmen have a certain interest in the profits.

QUESTIONS—What is capital? What is the difference between money and capital? Name some of the things of which capital may consist. Define wages, profit, interest, co-operation, partnership. Why is the man who accumulates capital a public benefactor? Why should the spendthrift be despised rather than admired?

WHAT IS COMPETITION?

Competition, striving.
Equipoise, equal weight.
Palpable, plain.

Unrestricted, unlimited.
Dispensed with, done without.

Competition—from Latin, *con* together, and *peto*, aim, or seek, means *aiming, or seeking together*. Strangely enough, its origin is resemblance, agreement. Men compete because they have similar desires. Two men seek the same thing—so far agreement. If both cannot have it, we have disagreement, rivalry. These two aspects of the word, and of its idea, are strikingly illustrated by the difference between the word *concurrence* in English, which means *agreement*, and the same word in French, which means *rivalry*, and is in fact the French word for competition. It literally means *running together* (Latin *con* and *curro*). Thus two horses run together to the same goal: so far agreement, or (English) *concurrence*; but each strives to reach it before the other, in order to gain the prize: here we have rivalry, the French *concurrence*.

A story told by M. Louis Blanc, in the first series of his admirable "Letters on England," well illustrates this striking divergence of meaning—agreement changing into, nay producing, antagonism. He says: "The Emperor Charles V. was accustomed, in speaking of Milan, to say 'My cousin, Francis I., and I are marvelously agreed about Milan: he wishes to have it; and I also.'"

Competition then means only that state of freedom in which individual interests and desires are left to seek their respective objects, without any outward restraint beyond that which the law imposes on palpable injustice. Each and every man is thus left at liberty to pursue his own interest, as he himself construes it, so long as he remains from violating the rights, or from unjustly dimming the interests, of his neighbour.

Let us inquire how far it is obviously each man's interest to have the freest possible competition.

I The buyer, that is every buyer, wishes the freest and fullest competition among sellers. The more sellers there are, and the freer they are to offer their goods or services at the rate each chooses, the surer he is that he will be well and cheaply served. If there were only one seller (literally, from the Greek, a *monopolist*), the buyer might be obliged to accept whatever terms the seller might impose, or go without the article or service that he desired to procure. The more needful to him the article or service, the more absolutely would the buyer be in the seller's power. A bracelet or a book might be dispensed with, but food and clothing the buyer must obtain even on very rigorous terms. We know well, whenever bread or meat is unusually dear, how readily and loudly the multitude denounce supposed combinations among bakers or butchers, who are reproached as having ceased to compete with each other, and as establishing by mutual agreement what is practically equivalent to a monopoly. It is then, not of competition, but of the absence (real or supposed) of competition, that buyers complain.

II But it is equally obvious that it is the interest of the seller—that is, every seller—to have the freest and fullest competition among buyers. If only one buyer offered himself, the seller would be obliged either to accept the offered terms, however low, or to keep the article that he wished to sell, and consequently to go without some other article that he wished to obtain.

exchange for his own. The more perishable the article he wished to sell, the more would the seller be at the mercy of the buyer. But the larger the number of buyers—that is, of persons wishing to buy, and the more free they are to propose terms, the more certain is the seller to obtain the highest terms possible.

Now if, as is quite undeniable, it is and must be the interest of every buyer to have free competition among sellers, and of every seller to have free competition among buyers, we have advanced far towards showing that it is for the interest of all men to have free competition. All men are buyers, and all men are sellers, in one way or other. In two respects then, at least, it is clearly the interest of all men to have ample and unrestricted competition, namely, the buyers among the sellers, and the sellers among the buyers.

Nevertheless, against competition contradictory complaints, from different quarters, are simultaneously urged. By one person or set of persons we are told that competition raises prices, or lowers wages; by others, that it raises wages, or lowers prices. It seems indeed, sometimes and in some places, to produce the one, and at other times or places the other, of these opposite results. I say *seems*, for the fact is that, in all cases, through or under competition, these fluctuations on the small scale tend to bring about on the large scale an equilibrium between consumption and production, or demand and supply, and to equalize prices, wages, profits, over the wide field of time and space. Thus, a railway is opened between a large town and an agricultural district; a larger market is made accessible to country produce, the producers naturally rejoice in the rise of prices resulting from the wider competition of purchasers or consumers; but this process is not equally acceptable to the country consumers, who find the prices to them enhanced. In the town again, the supply thus increased tends, so far as it goes, to lower the former prices. The net result is an approximation to

equality of price in town and country. At a watering place an unusual influx of visitors has similar effects. House rents, as well as prices, tend to rise; more houses are built to supply the demand, if this is thought likely to be permanent. Previous residents naturally complain of the increase of rents, but with no more reason than the owners of house property have for complaining that the extension of house building tends to reduce their rents. Just as one's hand, if held before the eyes, will hide the landscape and even the sun itself from view: so is it natural that each individual, especially if uninstructed in economics, should see only that which is in his own immediate foreground, that which concerns him most closely, and should shut his eyes to all besides. But the impartial onlooker takes a wider view, and summing up the aggregate result gladly recognises in it an increase of general well-being.—*Adapted from Dr. Hodgson's "Lecture on Competition."*

SUMMARY.—Competition, which is in one sense resemblance or agreement, results in antagonism or rivalry. That competition, should be ample and unrestricted is obviously each man's interest; it is only of combinations, which are practically equivalent to monopolies, that we have good reason to complain. Nevertheless, against competition contradictory complaints from different quarters are simultaneously urged, especially by individuals uninstructed in economics. But the impartial onlooker, summing up the aggregate result, gladly recognises in it an increase of general well-being.

QUESTIONS.—What is competition? Show how competition includes both agreement and rivalry. What is the opposite of competition? Show that competition is for the interest of the buyer. What is the result of combination? How does a railway between a large town and an agricultural district affect prices? What is the net result?



WAGES.

Surgeon [a contraction of *Chirurgion*—Fr., *chirurgien*—Gr., *cheiourgia*, *a* working by hand, a trade business—*cheiourgeo*, 'I do with the hands, execute—*chirurges*, working or doing by hand—*cheir*, the hand, and *ergon*, a work], *n.*, one who cures diseases by operations with the hand.

Genius *L., ingenium—genius—gignere*, (*genius*), I beget, produce], *n.*, the special inheritance of an individual; special taste or disposition qualifying for a peculiar employment; a man having such power of mind; also the peculiar constitution or character of anything.

Some labourers are paid higher wages than others. A carpenter earns more than a ploughman, and a watchmaker more than either; and yet this is not from the one working harder than the other.

And it is the same with the labour of the mind as with that of the body. A banker's clerk, who has to work hard at keeping accounts, is not paid so high as a lawyer or a physician.

You see, from this, that the rate of wages does not depend on the hardness of the labour, but on the *value* of the work done. But on what does the value of the work depend?

The value of each kind of work is like the value of anything else; it is greater or less, according to the *limitation of its supply*; that is, the *difficulty* of producing it. If there were no more expense, time, and trouble, in obtaining a pound of gold than a pound of copper, then gold would be of no more value than copper.

But why should the supply of watchmakers and surgeons be more limited than that of carpenters and ploughmen? That is, why is it more difficult to make a man a watchmaker than a ploughman?

The chief reason is, that the education required costs a great deal more. A long time must be spent in learning the business of a watchmaker or a surgeon, before a man

can acquire enough skill to practise. So that, unless you have enough to support you all this time, and also to pay your master for teaching you the art, you cannot become a watchmaker or a surgeon. And no father would go to the expense of bringing up his son to be a surgeon or watchmaker, even though he could well afford it, if he did not expect him to earn more than a carpenter, whose education costs much less.

But it is not the expensive education of a surgeon that causes him to be paid more for setting a man's leg, than a carpenter is for mending the leg of a table, but the expensive education causes fewer people to become surgeons. It causes the supply of surgeons to be more limited, that is confined, to a few; and it is this limitation which is the cause of their being better paid.

So that you see the value of each kind of labour is higher or lower, like that of all other things, according as the supply is limited.

Natural genius will often have the same effect as the expensiveness of education, in causing one man to be better paid than another. For instance, one who has a natural genius for painting, may become a very fine painter, though his education may not have cost more than that of an ordinary painter; and he will then earn, perhaps, ten times as much without working any harder at his picture than the other.

But the cause why a man of natural genius is higher paid for his work than another, is still the same. Men of genius are scarce; and their work, therefore, is of the more value, from their being limited in supply.

Some kinds of labour, again, are higher paid from the supply of them being limited by other causes, and not by the cost of learning them, or the natural genius they require. Any occupation that is *unhealthy*, or *dangerous*, or *disagreeable*, is paid the higher on that account, because people would not otherwise engage in it. There is this kind of limitation in the supply of house-painters, miners, gunpowder-makers, and several other.

NATURAL ADVANTAGES.

- Alimentary** [L., *alimentum*, nourishment, substance, food; also, I rear; nourish; support], *adj.*, pertaining to aliment or food; nourishing.
- Gratuitous** [L., *gratuitus*, done for favour—*gratia*, favour; *gratus*, causing joy; hence, kind, beloved, dear, prob. akin to Gr., *kairō* (lit., I cause), dear], *adj.*, done or given gratis, or for nothing; voluntary; free; countless.
- Patrimony** [L., *patrimonium*—*pater*, a father], *n.*, a right, or an estate inherited from a father, or one's ancestors.
- Fecundity** [L., *fecunditas*—*fecundus*, fruitful, fertile], *n.*, fruitfulness.

In all production nature and man occur. But the useful part which nature performs is always gratuitous. It is only that part of the utility that is due to human labour which forms the object of exchange, and consequently of remuneration. This no doubt varies very much, by reason of the intensity of the labour, of the skill, of the promptitude, of its aptitude, of the need for it at the time, of the temporary absence of rivalry, etc., etc. But it is not the less true in principle that the concurrence of natural laws belonging to all, does not at all enter into the product.

We do not pay for the air we breathe, though it is so useful to us that without it we could not live for two minutes. We do not pay for it, because nature supplies it to us without the intervention of any human labour.

But if we desired to separate from it one of the gases which compose it, for example, oxygen, we must give ourselves some trouble; or if we cause another to perform the work for us, we must pay him an equivalent price for his trouble, the same as he would have gained in producing another effect. Whence we see that the things really exchanged are trouble, efforts, and labour. I do not in reality pay for the oxygen gas, since it is everywhere at my disposal, but the labour required to disen-

gago it is the labour which has been spared to me, and I must make restitution for it.

It will be said that there are other things to pay for,—the expense of materials and of apparatus. But still in these things also it is only labour for which I pay. The price of the coal employed represents the labour which has been required to raise it from the mine, and to transport it thence.

We do not pay for the light of the sun, because nature lavishes it upon us. But we pay for that of gas, of tallow, of oil, of wax, because in these cases there is human labour to be remunerated; and observe, that it is entirely the work, and not its utility, to which remuneration is proportioned; so that it may very well happen that one of these illuminating powers, though much more intense than another may, notwithstanding, cost less. It would be sufficient for this result that the same quantity of human labour could furnish more of this product than of the other.

When the water-carrier supplies my house with water, if I pay for it with regard to the *absolute utility* of the water, my fortune would not suffice. But I pay him on account of the trouble which he has taken. If he requires more, others will supply me at that price; or in case of need, I could fetch it myself. The water is not really the subject of our bargain, but the labour required for the obtaining of the water.

This point of view is so important, and the consequences which I am about to draw from it so clear as to the freedom of international exchange, that I would fain still further elucidate my meaning by other examples.

The quantity of alimentary substance contained in potatoes does not cost us very dear, because they are obtained by comparatively little labour. We pay more for wheat, because, in order to produce it, nature exacts a much greater sum of human labour. It is evident that if nature did for the one as much as it does for the other, the prices would tend to a level. It is not possible that

the producer of wheat should permanently gain much more than the producer of potatoes. The law of competition would be opposed to this.

If by a fortunate miracle the fertility of all arable land were made to increase, it is not the agriculturist, but the consumer, who would reap the advantage of this excess, for it would be manifested by abundance and by cheapness. There would be less labour mixed up in each sack of corn, and the agriculturist would not be able to exchange it except against a less amount of labour incorporated in all other products.

If, on the contrary, the fecundity of the soil is by some cause suddenly diminished, the part of nature in its production will be less, and that of human labour greater, and the produce therefore dearer.

I am, then, correct in saying that it is in consumption by man that all economic phenomena are in the end explained. So long as we have not followed their effects to this point, so long as we stop at the *immediate* effects—to those which affect a man or a class of men, inasmuch as we consider the question *only as producers*, we are not economists, any more than he is a physician who, instead of following through the whole organic structure the medicinal draught in order to judge its effects, confines himself to observing how it affects the palate or the throat.

The tropical regions are very favourable to the production of sugar and coffee. This is the same as saying that nature does the greater part of the work, and leaves little to be done by manual labour. But then who reaps the advantages of this liberality of nature? Not those regions, for competition obliges them to receive only remuneration for the manual labour, but mankind in general, for the result of this liberality is *cheapness*, and cheapness belongs to all the world.

Here is a temperate zone, where coal and iron-ore are so near the surface that we have only to stoop to take it up. At first the inhabitants of such a spot, I grant you, would profit by this happy circumstance. But soon

competition would come forward, the prices of coal and iron would be lowered, so that the gift of nature might be gratuitously obtained by all, and human labour would be remunerated alone according to the general rate of profits.

Thus the bounties of nature, as well as improvements made in the processes of production, are, or are constantly tending to become, under the law of competition, the common and *gratuitous* patrimony of consumers, of the mass of humanity.

The countries which do not possess these advantages, have, therefore, everything to gain by exchanging with those who do possess them, because, exchange is made between *labour and labour*, the portion of usefulness derived from nature being deducted which these works include. And they are evidently the most favoured countries which have incorporated, in a given amount of human labour, the most of these *natural advantages*. Their products, representing less labour, are less highly paid for; in other terms, they are cheaper, and if all the liberality of nature resolves itself into *cheapness*, evidently it is not the country producing, but the country consuming, which reaps the benefit of it.

Bastiat.

OBSTACLES TO CHEAPNESS.

Assimilate [L., *assimulo*, I make like, or think like, compare, consider as similar —*ad.*, to, and *similis*, like], *v.t.*, to make similar or like to; to convert into a like substance, just as food is converted into the substance of our bodies.

Inclemency [L., *in*, not, and *clemens*, mild, calm, soft, a gentle], *n.*, want of clemency if it mildness of temper; harshness; storminess or severity of weather.

Ramification [L., *ramus*, a branch, bough, twig, and *facio*, I make], *n.*, division or separation into branches, division or subdivision.

Investigate [L., *investigo* (*investigatum*), I track or trace out (as a dog); I search into, find out, discover—in, and *vestigio*, I follow in a track, trace, inquire into], *v.t.*, *lit.*, to trace the vestiges of tracks of; to search into; to inquire into with care and accuracy.

Man is, by nature, entirely destitute. Between his state of destitution and the satisfying of his wants there exists a multitude of *obstacles*, which it is the end of labour to surmount. It is curious to investigate how and why these *obstacles* to his well-being have themselves become in his eyes the *cause* of his well-being.

I require to transport myself to a hundred leagues' distance. But between the points of departure and arrival mountains, rivers, morasses, impenetrable forests, robbers—in a word, *obstacles*, interpose; and to vanquish these obstacles I must use many efforts, or, which is the same thing, I must cause others to use many efforts, and for these I must pay them. It is clear, with regard to this case, that I should have been in a better condition if those obstacles had not existed.

To journey through life, and run through the long series of days which separate the cradle from the tomb, man requires to assimilate to himself a prodigious quantity of nourishment, to guard himself against the inclemencies of the seasons, to preserve himself from, or to cure himself of, a crowd of evils. Hunger, thirst, sickness, heat, cold, are so many obstacles set up in his path.

In a state of isolation, he must combat them all by hunting, fishing, husbandry, spinning, weaving, building; and it is clear that it would be better for him that these obstacles existed in a less degree, and still better if they did not exist at all. In society, he does not attack personally each of these many obstacles, but others do it for him; and, in return, he removes one of the obstacles by which his fellow-creatures are surrounded.

It is clear also, that, considering things in the mass, it is much better for men taken together, or for society, that the obstacles be as weak and also as few as possible.

But if we investigate social phenomena in their details, and the views of men as they have been modified by exchange, it will soon be perceived how they have hap-

pened to confound wants with wealth, and the obstacle with the object.

The separation of occupations, the result of the power of exchanging, causes each man, instead of striving on his own account with all the obstacles which surround him, to combat only with one; to combat it, not for himself alone, but for the benefit of his fellow-men, who in their turn render him a similar service.

But it results thence, that this man sees the immediate cause of his riches in the obstacle with which he has made it his profession to combat on account of others. The greater this obstacle is, the more seriously and urgently it is felt, the more disposed his fellow-men are to remunerate him for having vanquished it; that is to say, to remove, for his benefit, those obstacles which trouble him.

A physician, for example, does not occupy himself in baking his bread, in constructing his instruments, in weaving or making up his clothes. Others do these things for him, and in return he combats the maladies which afflict his patients. The more numerous, intense, and reiterated these maladies are, the more willing others are, the more they are forced, indeed, to work for his personal advantage. In this point of view, illness, that is to say, a general obstacle to the well-being of man, is a cause of the well-being of an individual.

All producers, in what concerns themselves, reason in the same manner. The ship-owner draws his profits from the obstacle called *distance*. The agriculturist from that which is called *hunger*. The manufacturer of stuffs from that called *cold*; the instructor lives upon *ignorance*; the jeweller upon *vanity*; the advocate upon *cupidity*; the attorney upon the possible *bad faith*, as the physician upon the *maladies of men*.

It is thus quite true that each profession has an immediate interest in the continuation, and even in the aggravation, of the special obstacle which forms the object of its exertions.

Seeing this, theorists who base their system upon these individual opinions, arrive at the following conclusions. They say, what we require is wealth; labour is wealth; the obstacle to well-being is well-being. To multiply obstacles is to give an incitement to industry.

Then come statesmen. They wield the public power, and what more natural than to make it serve to develop and create obstacles, since thus wealth also is developed and created? They say, for example: If we prevent the bringing of iron from places where it abounds, we create an obstacle to our procuring it. This obstacle, strongly felt, will determine us to pay for being relieved from it. A certain number of our citizens will set themselves to contend against it, and this obstacle will make their fortunes. The greater the obstacle, the scarcer the mineral, the more inaccessible, the more difficult to transport, the further removed from the markets of consumption, the more hands will this branch of industry in all its ramifications occupy. Let us then exclude foreign iron, let us create obstacles, in order to call forth the industry which combats them.

In order to penetrate to the bottom of this sophism,* it is sufficient to say, that human labour is not an *end* but a *means*. It is never left without employment. If one obstacle fails, it will attack another, and humanity is freed from two obstacles by the same amount of labour which would have destroyed but one only. If any branch of industry ever became useless, both the capital and the labour would take another direction.

But from what fund, it may be asked, would the labour be remunerated? Precisely from that which remunerates it now; for when a mass of labour becomes disposable through the removal of an obstacle, a corresponding amount of remuneration becomes disposable also.

Bastiat.

* *Sophism*, a specious but fallacious argument.

THE PRODUCER AND THE CONSUMER.

Abnegation [L., *abnego* (*abnegatum*), I refuse—*ab*, from, and *nego* (*ne aio*), I say no, I deny], *n.*, *denial*; renunciation; a giving up; self-denial.

Panacea [Gr., *panakeia*—*pas*, *pan*, all, and *akeiai*, I heal], *n.*, an *all-healing* remedy; a universal medicine.

Propitious [*propitio*, I appease,

render favourable—*propitius*, favourable, well-disposed, kind—*prope*, near], *adj.*, *lit.*, *being near*; favourable; disposed to be gracious or merciful.

Chimera [Gr., *chimaira*, a she-goat], *n.*, a fabulous, fire-spouting monster, with a lion's head, a serpent's tail, and a goat's body; any idle or wild fancy.

Let us take a producer of any description; what is his immediate interest? It consists in these two things: 1st, That the smallest number possible of persons should occupy themselves in the same business as himself. 2nd, That the greatest number possible of persons should seek for the produce of this kind of labour; which political economy expresses more succinctly in these terms:—that the supply may be very restricted and the demand very extended; and again, in other terms, competition limited and sale unlimited.

What is the immediate interest of the consumer? That the supply of the productions which he requires may be extended, and the demand restricted. Since these two interests are at variance with each other, one of them ought necessarily to coincide with the social or general interest, and the other to be contrary to it.

But which of these should legislation favour, as being the expression of the public good, if indeed it ought to favour either? In order to arrive at this knowledge, it is sufficient to inquire what would happen if the secret desires of men were accomplished.

In the character of producers, it must be allowed each of us has anti-social wishes. Are we wine-growers?

Should we be grieved if there were a frost affecting all the vines in the world except ours? *This is the theory of scarcity.*

Are we proprietors of ironworks? We should desire that there was no other iron in the market than that which we brought there, however much the public might be in want of it; and precisely because this want was so urgently felt and so imperfectly satisfied, we should receive a high price for our own iron. *This is again the theory of scarcity.*

Are we husbandmen? We say, with M. Bugeand, let bread be dear, that is to say scarce, and the agriculturist will flourish. *This is still the theory of scarcity.*

Are we physicians? We cannot prevent ourselves from seeing that certain physical ameliorations, such as rendering our country more healthy by sanitary measures; the development of certain moral virtues, such as moderation and temperance; the progress of enlightenment carried to such a point that each might know how to take care of his own health; the discovery of certain simple remedies, and their easy application, would be so many fatal blows against our profession.

Inasmuch as we are physicians, our secret wishes are anti-social. I will not say that physicians actually form such wishes. I would rather believe that they would welcome with joy a universal panacea; but in this benevolent sentiment it is not the physician—it is his humanity that manifests itself. He places himself, by a laudable abnegation of self, in the same point of view as the consumer. Inasmuch as exercising a profession—inasmuch as deriving from this profession his support, his position in the world, and the means of existence for his family, it cannot be but that his desires, or, if you will, his interests, must be anti-social.

Do we manufacture cotton goods? We desire to sell them at the price most advantageous for us. We would willingly consent that all rival manufactures were prohibited; and if we dare not express publicly this wish,

or pursue the complete realization of it with any chance of success, we would arrive at it in a certain degree by indirect means; for example, by excluding foreign tissues, in order to diminish the *quantity in the market*, and to produce thus, by the employment of power and for our own benefit, the scarcity of clothing.

We could thus pass under review every branch of industry, and should always find that producers, inasmuch as they are such, have anti-social views. "The shop-keeper," says Montaigne, "prosperes by the excesses of youth, the farmer by the dearth of corn, the architect by the ruin of houses, the officers of justice by lawsuits and the quarrels of men. The honour, even, and business of ministers of religion, is drawn from our death and our vices. No physician can take pleasure in the health even of his friends, nor soldiers in the peace of the city; and so of the rest."

It follows thence, that if the secret wishes of each producer were realized, the world would rapidly retrograde towards barbarism. The sail would proscribe steam; the oar would proscribe the sail, and in its turn would soon have to cede the right of transit to the cart, this again to the mule, and the mule to the pedlar.

Wool would exclude cotton, cotton would exclude wool, and thus it would go on till the dearth of everything would cause man himself even to disappear from the surface of the globe.

If we now proceed to consider the immediate interest of the consumer, we shall find that it is in perfect harmony with the general interest, with what the well-being of the human race demands.

When the buyer presents himself in the market, he desires to find it abundantly provided; that the seasons may be propitious to the gathering in of the various produce; that inventions more and more admirable may place within his reach a greater number of articles of necessity and of comfort; that time and labour may be saved; that distances may vanish; that the spirit of

peace and of justice may allow a diminution in the weight of taxes; that barriers of every kind may fall: in all this the interest of the consumer runs parallel with the public interest well understood.

He can push his secret wishes to a chimera, to absurdity, without his wishes ceasing to be philanthropic. He may desire that provisions and furniture, the house and the hearth, instruction and morality, security and peace, strength and health, may be obtained without effort, without labour, and without limit, as the dust of the roads, the water of the torrent, the air which surrounds us, the light which enwraps us, without the realization of such desire being in contradiction to the good of society.

Bastiat.



SOME CAUSES OF POVERTY.

Neutralise [Fr., *neutraliser*—*neutre*, neuter, neutral; L., *neutralis*—*neuter*, neither the one nor the other, neither of two—*ne*, not, and *uter*, either], *v. t.*, to render neutral or indifferent; to counteract; to nullify.

Extirpating [L., *extirpo* (*extirpatus*), I pluck up by the root; root out, eradicate—*ex*, out, and *stirps*, a root], *pr. p.*, *rooting out*; destroying utterly, exterminating.

Insolvency [L., *in*, not, and *solvus*, *entis*, *pr. p* of *solvere*, I loosen, pay], *n.*, inability of a person to pay his debt, or the state of wanting property sufficient for such payment.

Pestilence [L., *pestilentia*, an infectious or contagious disease, a plague—*pestilens*, pestilential, infected, unhealthy—*pestis*, a deadly disease, esp. a contagious one], *n.*, any contagious deadly disease; plague.

Destitution and its sad consequences may be treated as we treat other calamities, such as pestilence, shipwrecks, fires, and drought. We inquire into their causes. Having ascertained them, in whole or in part, we pro-

ceed to remove or neutralise them, if that be possible, and if not possible, or only partially so, we bend our endeavours to mitigate their effects.

Let us deal in this way with Poverty. Can we ascertain the causes, or any of the principal causes, of poverty? Having inquired, we may be rewarded by not only finding some of the causes, but by learning how education may be so improved and extended as to subject them to its control.

Drunkenness, we must all agree, is a cause of poverty. But, if we were invited to make education a means of extirpating it, we might be puzzled how to proceed.

An inquiry into the causes of drunkenness in adult life leads over a wide field. Squalid homes, unwholesome and insufficient food, vitiated air, want of warmth, absence of interesting pursuits, overtaxed strength, disappointment, harassing fear and grief, and ill-chosen friends and companions, all incline towards over-indulgence in alcoholic drinks.

Trace the usual career of a young man starting in life. Supposing his attainments and character are satisfactory, and that he procures a respectable situation, his wages, or salary, will eventually increase in proportion to the market value of his labour. In due time he marries, on the assumption that two, with ordinary care, can live as comfortably as one can do with ordinary carelessness, as regards savings. By-and-by, however, his family increases, while his earnings remain stationary. Here is an exigency which he omitted to take into calculation. Illness, and the usual lot of domestic afflictions, overtake him. These also he had failed to foresee and provide against. Is it difficult to understand how this well-disposed couple with their young family may be found among the indifferently provided—among the four out of every twenty, or sinking into the more miserable one in twenty in the ranks of pauperism?

Could the teachers of these young people have done more than they did to guard them against so miserable a future? Can we hope to preserve the well-disposed

children now under our care from a like destiny? These are some of the questions which we have to put to ourselves.

Dishonesty is another cause of poverty, and may also be classed among the effects of poverty; since poverty exposes to temptation. Unlike drunkenness, it finds its way into our schools; and if we cannot extirpate it there the culprit must be dismissed, so that he may not contaminate his schoolfellows.

There are many cases of dishonesty in later life, of which no particular apprehension was felt from character and conduct at school. When reports from the police-courts bring to our notice prisoners charged with forgery, embezzlement, or stealing from the till, who had been raised to places of trust by their employers, or labourers in regular employment at docks and warehouses, charged with petty thefts, we cannot but suspect that their conviction and loss of character are stepping-stones to destitution.

Is not a habit of expenditure out of proportion to means at command a likely cause of the weakness which made the temptation too strong to be resisted? Shall we, as teachers, admit our inability to prepare our pupils to live well within their means—by which will be understood, saving a portion of them, and thus gather strength to resist temptation, or, better still, to keep it at bay?

With work carried on as it is in these days—with an incessant look-out for the application of new discoveries and contrivances—we cannot omit ignorance and incapacity from a list of causes of poverty.

The first step of the young in life, after quitting school, is to find somebody capable and willing to buy their services. Whatever their eventual positions may be, whether to be masters or servants, working on their separate accounts, or as partners in a mercantile firm or in a co-operative store or mill, they must begin by serving; and somebody must be prevailed upon to engage them. They must be prepared to answer these

questions,—What do you know? What can you do? What may I hope you will be able to do shortly, if I put up for a time with your undeveloped capacity to serve me?

Not to speak of the children who never enter a school, there is reason to fear that very many of those who issue from one are but ill-prepared to give satisfactory answers to these questions, or to realise the favourable expectations formed of them.

We must bear in mind, that the knowledge and aptitude here asked for are something more than reading, writing, and ciphering, and what may be called book-learning. These are all essential, and much besides, and especially a knowledge of how little the young can know on leaving school, compared with what they will have to learn if they would be useful to others and thrive themselves.

The late Professor Cowper, at King's College, used to tell his pupils, when they talked to him rather despondingly of their industrial prospects, "Make yourselves useful, and you'll be used;" in other words,—Make yourselves useful, and your services will first be accepted, afterwards sought for, and more and more as you make yourselves more useful. Your anxieties and efforts at starting are part of the trials and discipline which, if met in a right spirit, will form your characters and bring you fruit in the future.

If we dare not boast that we can send forth our pupils thus prepared to enter upon the work of industrial life, we may vow that we will seize every opportunity of self-improvement, and use all our efforts to enable us to do so. Will not every inch of progress that we make for the purpose act as an encroachment upon the realm of pauperism?

The only other causes of poverty which I shall refer to here are those which may be classed under the head of causes leading to industrial disturbance, derangement, waste, and suspension of labour.

Disagreements between employers and employed, which lead to suspension of work, are attended with injurious results to both. Consumption goes on, while those precautions to replace what is consumed, which are never neglected in a wholesome state of society, are wilfully omitted for a time. The children in our schools are the future employers as well as the future employed, and they will be borrowers as well as lenders in the industrial world.

Are our schools doing all that might be expected of them to send forth a race of men well grounded in the morals of credit, who will be ashamed to take credit which they do not deserve, to accept engagements which they will be unable to fulfil? and also a race of lenders or investors, who will be competent to read and interpret the signs by which dishonest or reckless borrowers may be distinguished from the honest and prudent?

Ellis.

THE PATH TO HEAVEN.

The holy man who stands immovable,
 As if erect upon a pinnacle,
 His appetites and organs all subdued,
 Sated with knowledge secular and sacred,
 To whom a lump of earth, a stone, or gold,
 To whom friends, relatives, acquaintances,
 Neutrals* and enemies, the good and bad,
 Are all alike, is called "one yoked† with God."
 The man who aims at that supreme condition
 Of perfect yoking with the Deity,
 Must first of all be moderate in all things,—
 In food, in sleep, in vigilance, in action,

* *Neutrals*, indifferent persons † *Yoked*, joined.

In exercise and recreation. Then
 Let him, if seeking God by deep abstraction,
 Abandon his possessions and his hopes,
 Betake himself to some secluded spot,
 And fix his heart and thoughts on God alone.
 There let him choose a seat, not high nor low,
 And with a cloth or skin to cover him,
 And Kúsa grass beneath him, let him sit
 Firm and erect; his body, head, and neck
 Straight and immovable; his eyes directed
 Towards a single point, not looking round;
 Devoid of passion, free from anxious thought;
 His heart restrained, and deep in meditation.
 E'en as a tortoise draws its head and feet
 Within its shell, so must he keep his organs
 Withdrawn from sensual objects. He whose senses
 Are well controlled attains to sacred knowledge,
 And thence obtains tranquillity of thought.
 Without quiescence* there can be no bliss.†
 E'en as a storm-tossed ship upon the waves,
 So is the man whose heart obeys his passions,
 Which, like the winds, will hurry him away.
 Quiescence is the state of the Supreme.
 He who, intent on meditation, joins
 His soul with the Supreme, is like a flame
 That flickers not when sheltered from the wind.

Bhagavad-Gītā: Monier Williams.



* Quiescence, calm, repose.

† Bliss, happiness.

LITERARY SELECTIONS.

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A DROP OF WATER.

Surely you know what a microscope is—that wonderful glass which makes everything appear a hundred times larger than it really is. If you look through a microscope at a single drop of ditch-water, you will perceive more than a thousand strange-shaped creatures, such as you never could imagine dwelling in water. It looks not unlike a plateful of shrimps, all jumping and crowding upon each other; and so ferocious are these little creatures, that they will tear off each other's arms and legs without mercy; and yet they are happy and merry after their fashion. Now, there was once an old man, whom all his neighbours called Cribbley Crabbly—a curious name to be sure! He always liked to make the best of everything, and when he could not manage it otherwise he tried magic. So one day he sat with his microscope held up to his eye, looking at a drop of ditch-water. Oh, what a strange sight was that! All the thousand little imps in the water were jumping and springing about, devouring each other, or pulling each other to pieces.

"Upon my word, this is too horrible!" quoth old Cribbley Crabbly; "there must surely be some means of making them live in peace and quiet." And he thought and thought, but still could not hit on the right expedient. "I must give them a colour," he said, at last, "then I shall be able to see them more distinctly;" and accordingly he let fall into the water a tiny drop of something that looked like red wine, but in reality it was witches' blood; whereupon all the strange little creatures immediately became red all over, not unlike the Red Indians; the drop of water now seemed a whole townful of naked wild men.

"What have you there?" inquired another old magician, who had no name at all, which made him more remarkable even than Cribbley Crabbly.

"Well, if you can guess what it is," asked Cribbley Crabley, "I will give it you, but I don't think you'll find it out so easily."

And the magician without a minute's delay, through the microscope. This scene now revealed to the eyes of the two men resembled a town where all the inhabitants were running about without clothing. It was a horrible sight, but still more horrible was it to see how they were treated. All those that were low must needs strive to get up higher, and all those that were highest must be thrust down. "Look, look!" they seemed to be crying out, "hider! hider! than mine, pah off with it!" And there is one little lump behind his ear—an innocent little lump enough, but it pains him, and it shall pain him more." And they kicked it and soiled it and of him and devoured him merely because of this little lump. Only one of the creatures was quiet, very quiet, and still it sat by itself like a little modest dunce waiting for nothing but peace and rest. But the others would not have it so, they pulled the little dunce forward, kicked her, cut her and stole her.

"This is most uncommonly amusing," remarked the nameless magician.

"Do you think so?" Well, but what is it?" asked Cribbley Crabley. "Can you guess, or can you not?—that's the question."

"To be sure I can guess," was the reply of the nameless magician, "easy enough. It is either Copenhagen or some other large city, I don't know which, for they are all alike. It is some large city."

"It is a drop of ditch-water!" said Cribbley Crabley.

Dunish Læ, / Læje og Lærlæ

fan over the paper insect, he proceeded to set it in motion. A counter-draught of air from some quarter interfered with his efforts, and made the butterfly truant to his will, and the screen had to be moved a little to remedy this. He then threw the paper butterfly up in the air, and gradually it seemed to acquire life from the action of his fan—now wheeling and dipping towards it, now tripping along its edge, then hovering over it, as we may see a butterfly do over a flower on a fine summer's day; then in wantonness wheeling away, and again returning to alight, the wings quivering with nervous restlessness! One could have sworn it was a live creature. Now it flew off to the light, and then the conjuror recalled it, and presently supplied a mate in the shape of another butterfly, and together they rose and played about the old man's fan, varying their attentions between flirting with one another and flirting along the edge of the fan.

We repeatedly saw one on each side of the fan as he held it nearly vertically, and gave it a short, quick motion; then one butterfly would pass over to the other, both would wheel away as if in play, and again return. A plant with some flowers stood in a pot near at hand; by gentle movements of the fan the pretty creatures were led up to it, and then, their delight! how they played about the leaves, sipped the flowers, kissed each other, and whisked off again with all the airs and graces of real butterflies! The audience was in ecstasies, and young and old clapped their hands with delight.

When the exhibition had ended, the old man advanced to the front of his stage, within arm's length of us all, accompanied by his magic butterflies, that even in the open air continued to play round the magician and his fan! As a feat of legerdomain, it was by far the most beautiful trick we had ever heard of, and one that must require an immense amount of practice.

Osborne.

NIGHT AND DAY.

In old times, long, long ago, when Night and Day were young and foolish, and had not discovered how necessary they were to each other's happiness and well-being, they chased each other round the world in a state of angry disdain. Each thought that he alone was doing good, and that therefore the other, so totally unlike himself in all respects, must be doing harm, and ought to be got rid of altogether, if possible.

Old northern tales say that they rode, each of them, in a car with a horse to it; but the horse of Night had a frosty mane, while that of Day had a shiny one. Moreover, foam fell from Frosty-mane's bit as he went along, which dropped on the earth as dew; and Shiny-mane's mane was so radiant that it scattered light through the air at every step. And thus they drove on, bringing darkness and light over the earth in turn—each pursuing and pursued; but knowing so little of this simple fact, that one of their chief causes of dispute was, which was going first. For, of course, if they had been able to settle that, it would have been known which was the more important of the two; but as they drove in a circle the point could not be decided, since what was first on the one side was sure to be last on the other, as anybody may see who tries to draw their journey. They never gave this a thought, however, and there were no schoolmasters about just then to teach them. So round and round the world they went, without even knowing that it was round, still less that there was no such thing as first and last in a circle. And they never succeeded in overtaking, so as to pass each other, though they sometimes came up very close, and then there was twilight.

Of the two, one grumbled and the other scolded the most, and it is easy to guess which did which. Night was gloomy by nature, especially when clouds hid the

moon and the stars, so her complaints took a serious and melancholy tone. She was really broken-hearted at the exhaustion produced all over the world by the labours and pleasures which were carried on under the light of Day, and used to receive the earth back as if it were a sick child, and she a nurse, who had a right to be angry with what had been done to it. Day, on the contrary, was amazingly cheerful, particularly when the sun shone; never troubled his head about what was to happen when his fun was over: on the contrary, thought his fun ought to last for ever, because it was pleasant; was quite vexed when it was put a stop to, and had no scruple in railing at his rival, whose only object, as it seemed to him, was to overshadow and put an end to all the happiness that was to be found.

"Cruel Night," he exclaimed, "what a life you lead me! How you thwart me at every turn! What trouble I have to keep your mischief in check. Look at the mists and shadows I must drive on one side before I can make the world bright with my beautiful light! And, no sooner have I done so, than I feel your cold unwholesome breath trying to come up to me behind! But you shall never overtake me if I can help it, though I know that is what you want. You want to throw your hateful black shadow over my bright and pleasant world."

"I doing mischief which you have to keep in check!" groaned Night, quite confused by the accusation. "I, whose whole time is spent in trying to repair the mischief other people do: *your* mischief, forsooth! you wasteful consumer of life and power! Every twelve hours I get back from you a half worn-out world, and this I am expected to restore and make as good as new again; but how is it possible? Something I can do, I know. Some wear and tear I can renew and refresh, but some, alas! I cannot; and thus creep in destruction and death."

"Hear her," cried Day, in contempt, "taunting me with the damage I do, and the death and destruction I cause! I, the Life-giver, at whose word the whole world awakes,

which else might lie asleep for ever; she, the grim likeness of the death she talks about, and bringing death's twin sister in her bosom."

"You are Day the destroyer, I, Night the restorer," persisted Night, evading the argument.

"I am Day the life-giver, you, Night the desolator," replied Day, bitterly.

"I am Night the Restorer, you, Day the destroyer," repeated Night.

"You are to me what death is to life," shouted Day.

"Then death is a restorer as I am," exclaimed Night.

And so they went on, like all other ignorant and obstinate arguers; each full of his own one idea, and taking no heed of what the other might say. How could the truth be got at by such means? Of course it could not, and of course, therefore, they persisted in their madness. And there were certain seasons, particularly, when they became more impertinent to each other than ever. For instance, whenever it was summer, Day's horse, Shiny-mane, got so strong and frisky that Night had difficulty to keep her place at all, so closely was she pressed in the chase. Indeed, sometimes there was so little of her to be seen, that people might have doubted whether she had passed by at all, had it not been for the dew Frosty-mane scattered, and which those saw who got up early enough in the morning.

Oh, the boasting of Day at these times! And really he believed what he said. He really thought that it would be the greatest possible blessing if he were to go on for ever, and there were to be no Night. Perhaps he had the excuse of having heard a whisper of some old tradition to that effect; but the principal cause of the mistake was, that he thought too much about himself and too little about his neighbour. "Fortunate world," cried he, "it must be clear to every one, now, who it is that brings blessings and does good to you and your inhabitants. Good old earth, you become more and more lovely and fruitful, the more and more I shorten the hours of Night

and lengthen my own. We can do tolerably well without her restoring power, it would seem ! If we could be rid of her altogether, therefore, what a Paradise there would be ! Then the foliage, the flowers, the fruits, the precious crops of this my special season, would last for ever. Would that it could remain uninterrupted !"—*Mrs. Galt* .



LITTLE WHITE LILY.



Little white Lily sat by a stone,
Drooping and waiting till the sun shone.
Little white Lily sunshine has led ;
Little white Lily is lifting her head.

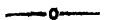
Little white Lily said, "It is good ;
Little white Lily's clothing and food."
Little white Lily, dressed like a bride !
Shining with whiteness, and crowned bride !

Little white Lily droopeth with pain,
Waiting and waiting for the wet rain.
Little white Lily holdeth her cup ;
Rain is fast falling, and filling it up.

Little white Lily said, "Good again,
When I am thirsty to have nice rain ;
Now I am stronger, now I am cool ;
Heat cannot burn me, my veins are so full."

Little white Lily smells very sweet :
On her head sunshine, rain at her feet.
"Thanks to the sunshine, thanks to the rain !
Little white Lily is happy again !"

G. MacDonald.



SAGACITY OF THE POODLE.

A shoe-black on the New Bridge at Paris had a poodle dog, whose sagacity brought no small profit to his master. If the dog saw a person with well-polished boots go across the bridge, he contrived to dirty them, by having first rolled himself in the mud of the Seine. His master was then employed to clean them. An English gentleman, who had suffered more than once from the annoyance of having his boots dirtied by the dog, was at last induced to watch his proceedings, and thus detected the tricks he was playing for his master's benefit. He was so much pleased with the animal's sagacity, that he purchased him at a high price and conveyed him to London. On arriving there, he was confined to the house till he appeared perfectly satisfied with his new master and his new situation. He at last, however, contrived to escape, and made his way back to Paris, where he rejoined his old master, and resumed his former occupation. I was at Paris some years ago, where this anecdote was related to me, and it is now published in the records of the French Institute.

Nor is this a solitary instance of the extraordinary sagacity of the poodle. A lady of my acquaintance had one for many years, who was her constant companion both in the house and in her walks. When, however, either from business or indisposition, her mistress did not take her usual walk on Wimbledon Common, the dog, by jumping on a table, took down the maid servant's bonnet, and held it in her mouth till she accompanied the animal to the Common.

A friend of mine had a poodle dog who was not very obedient to his call when he was taken out to run in the fields. A small whip was therefore purchased, and the dog one day was chastised with it. The whip was placed on a table in the hall of the house, and the next morning

it could not be found. It was soon afterwards discovered in the coal cellar. The dog was a second time punished with it, and again the whip was missed. It was afterwards discovered that the dog had attempted to hide the instrument by which pain had been inflicted on him. There certainly appears a strong approach to reason in this proceeding of the dog. *Cause and effect* seem to have been associated in his mind, if his mode of proceeding may be called an effect of it.

The following anecdotes prove the strong affection and perseverance of the poodle. The late Duke of Argyll had a favourite dog of this description, who was his constant companion. This dog, on the occasion of one of the Dukes journeys to Inverary Castle, was, by some accident or mistake, left behind in London. On missing his master, the faithful animal set off in search of him, and made his way into Scotland, and was found early one morning at the gate of the castle.

A poor German artist who was studying at Rome, had a poodle dog who used to accompany him, when his funds would allow it, to an eating-house frequented by other students. Here the dog got scraps enough to support him. His master, not being able to support the expense, discontinued his visits to the place. His dog fared badly in consequence, and at last his master returned to his friends in Germany, leaving his dog behind. The poor animal slept at the top of the stairs leading to his master's room, but watched in the day-time at the door of the tavern, and when he saw his former acquaintances crowding in, he followed at their heels, and thus gained admittance, and was fed till his owner came back to resume his studies.

NOBLE REVENGE.

A young officer (in what army no matter) had so far forgotten himself, in a moment of irritation, as to strike a private soldier, who happened to be distinguished not less for personal dignity than for courage. The inexorable laws of military discipline denied to the injured soldier any practical redress. He could look for no retaliation by acts. Words only were at his command; and, in a tumult of indignation, as he turned away, the soldier said to his officer that he would "make him repent it." This, wearing the shape of a menace, naturally rekindled the officer's anger, and effectually extinguished any possible inclination towards a sentiment of remorse; and thus the irritation between the two young men grew hotter than before.

Some weeks after this, a skirmish with the enemy took place. Suppose yourself a spectator, and looking down into a valley occupied by two armies. They are facing each other, you see, in martial array. But it is no more than a skirmish which is going on; in the course of which, however, an occasion suddenly arises for a desperate service. A redoubt, which has fallen into the enemy's hands, must be recaptured at any price, and under circumstances of all but hopeless difficulty. A strong party has volunteered for the service; there is a cry for somebody to head them; you see a soldier step out from the ranks to assume this dangerous leadership; the party moves rapidly forward; in a few minutes it is swallowed up from your eyes in clouds of smoke; for one half-hour from behind these clouds you hear distinct enough reports of bloody strife—fierce repeating signals, flashes from the guns, rolling musketry, and exulting hurrahs, advancing or receding, slackening or redoubling.

At length all is over; the redoubt has been recovered; that which was lost is found again; the jewel which had

been made captive is ransomed with blood. Crimsoned with glorious gore, the wreck of the conquering party is relieved, and at liberty to return. From the river you see it ascending. The plume-crested officer in command rushes forward, with his left hand raising his hat in homage to the blackened fragments of what once was a flag; whilst with his right hand he seizes that of the leader, though no more than a private from the ranks. *That* perplexes you not; mystery you see none in *that*. For distinctions of order perish, ranks are confounded, "high and low" are words without a meaning, and to wreck goes every notion or feeling that divides the noble from the noble, or the brave man from the brave. But wherefore is it that now, when you might least of all expect it, suddenly they pause? This soldier, this officer—who are they? O reader! once before they had stood face to face—the soldier it is that was struck; the officer it is that struck him. Once again they are meeting, and the gaze of armies is upon them. If for a moment a doubt divides them, in a moment the doubt has perished. One glance exchanged between them publishes the forgiveness that is sealed for ever. As one who recovers a brother whom he had accounted dead, the officer sprang forward, threw his arms around the neck of the soldier and kissed him, as if he were some martyr glorified by that shadow of death from which he was returning; whilst on *his* part, the soldier, stepping back, and carrying his open hand through the beautiful motions of the military salute to a superior, makes this immortal answer—that answer which shut up for ever the memory of the indignity offered to him, even whilst for the last time alluding to it:—"Sir," he said, 'I told you before, that I would make you repent it.'—*De Quincey*.

THE UNIVERSE.

To us who dwell on its surface, the earth is by far the most extensive orb that our eyes can anywhere behold; but, to a spectator placed on one of the planets, it looks no larger than a spot. To beings who dwell at still greater distances, it entirely disappears. That which we call alternately the morning and the evening star, as in the one part of her orbit she rides foremost in the procession of night, in the other ushers in and anticipates the dawn, is a planetary world, which, with the five others that so wonderfully vary their mystic dance, are in themselves dark bodies, and shine only by reflection; have fields, and seas, and skies of their own; are furnished with all accommodations for animal subsistence, and are supposed to be the abodes of intellectual life. All these, together with our earthly habitation, are dependent on the sun, receive their light from his rays, and derive their comfort from his benign agency.

The sun, which seems to us to perform its daily stages through the sky, is, in this respect, fixed and immovable, it is the great axle about which the globe we inhabit, and other more spacious orbs, wheel their stated courses. The sun, though apparently smaller than the dial it illuminates, is immensely larger than this whole earth, on which so many lofty mountains rise, and such vast oceans roll. A line extending from side to side through the centre of that resplendent orb, would measure more than 882,000 miles: a girdle, formed to go round its circumference would require a length of millions. Are we startled at these reports of philosophers? Are we ready to cry out in a transport of surprise, "How mighty is the Being who kindled such a prodigious fire, and keeps alive from age to age such an enormous mass of flame"?

Let us attend our philosophic guides, and we shall be made acquainted with speculations more enlarged and

more interesting. The sun, with all its attendant planets, is but a very little part of the grand machine of the universe; every star, though in appearance no bigger than the diamond that glitters upon a lady's ring, is really a vast globe like the sun in size and in glory! no less spacious, no less luminous, than the radiant source of the day: so that every star is not barely a world, but the centre of a magnificent system; has a host of worlds irradiated by its beams, and revolving round its attractive influence—all which are lost to our sight. That the stars appear like so many diminutive points is owing to their immense and inconceivable distance. So immense and inconceivable is the distance, that we could hardly express it in figures.

While beholding this vast expanse I learn my own extreme meanness, I would also discover the abject littleness of all terrestrial things. What is the earth, with all her ostentatious scenes, compared with this astonishingly grand furniture of the skies? What, but a dim speck hardly perceptible in the map of the universe? It is observed by a very judicious writer, that if the sun himself, which enlightens this part of the creation, were extinguished, and all the host of planetary worlds which move about him were annihilated, they would not be missed by an eye that can take in the whole compass of nature any more than a grain of sand upon the sea-shore.

The bulk of which they consist, and the space which they occupy, are so exceedingly little in comparison with the whole, that their loss would leave scarce a blank in the immensity of God's works. If, then, not our globe only, but this whole system, be so very diminutive, what is a kingdom or a country? What are a few lordships, or the so much admired patrimonies of those who are styled wealthy? When I measure them with my own little pittance, they swell into proud and bloated dimensions; but when I take the universe for my standard, how scanty is their size, how contemptible their pretension! They shrink into pompous nothings.—*Addison*.

MAXIMS FROM THE RĀMĀYANA AND
MAHĀBHĀRATA.

To carry out an enterprise in words
Is easy; to accomplish it by acts
Is the sole test of man's capacity.—(R)

Whate'er the work a man performs,
The most effective aid to its completion—
The most prolific source of true success—
Is energy without despondency.—(R)

An evil-minded man is quick to see
His neighbour's faults, though small as mustard-seed;
But when he turns his eyes towards his own,
Though large as Bilva¹ fruit, he none descries.—(M)

Conquer a man who never gives by gifts;
Subdue untruthful men by truthfulness;
Vanquish an angry man by gentleness;
And overcome the evil man by goodness.—(M.)

Triple restraint of thought and word and deed,
Strict vow of silence, coil of matted hair,
Close shaven head, garments of skin or bark,
Keeping of fasts, ablutions, maintenance
Of sacrificial fires, a hermit's life,
Emaciation—these are all in vain,
Unless the inward soul be free from stain.—(M)

Reflect that health is transient, death impends,
Ne'er in thy day of youthful strength do aught
To grieve thy conscience, lest when weakness comes,
And thou art on a bed of sickness laid,
Fear and remorse augment thy sufferings.—(M)

Do naught to others which if done to thee
Would cause thee pain; this is the sum of duty.—(M.)

Just heaven is not so pleased with costly gifts,
Offered in hope of future recompense,
As with the merest trifle set apart
From honest gains, and sanctified by faith.—(M)

¹ Bilva, quince.

² Descries, notices.

THE SUN—SAVITRI.

The sun appears to have been amongst the earliest objects of worship which attained a measure of personality. Never a very powerful or universal deity, he is, however, addressed with reverence, and even at the present time Hindus daily celebrate the moment of sunrise by prostrations and worship. The words they use are the well known *Giyiti*, which is a prayer so called, in the 31st *Mandala*, or book of the *Rig-Veda*. The sun is in it addressed as *Savitri*—

“We meditate on that desirable light of the divine *Savitri*, who influences our pious rites.”

“Desirous of food, we solicit with praise of the divine *Savitri* the gift of affluence.”

These words are now almost the only surviving relic of direct sun-worship; but in the *Rig-Veda* the sun is frequently invoked, and some of the most beautiful expressions of love and reverence are addressed to the divine *Savitri*.

“His courses bear on high the divine, all-knowing Sun, that he may be seen by all (the worlds).”

“(At the approach) of the all-illuminating Sun, the constellations depart with the night like thieves.”

“His illuminating rays behold men in succession, like blazing fires.”

“Thou, *Sūrya*, out-trippest all in speed. Thou art visible to all, thou art the source of light, thou shinest throughout the entire firmament.”

“Beholding the upspringing light above the darkness, we approach the divine Sun among the gods, the excellent light. . . Rising to-day, and mounting into the highest heaven, do thou, O Sun, remove the sickness of my heart and the yellowness (of my body).”

“Let us transfer the yellowness (of my body) to the parrots, to the stallings, or to the *Haritāla* (tree).”

"If, Savitri, through ignorance, through pride in feeble or powerful (dependants), or through human infirmity, we have committed (offence) against thy divine person, or against gods or men, do thou on this occasion hold us to be unoffending.

"The divine Savitri diffuses his light on high, dispersing the dew. . . . Divine (sun), thou proceedest with most powerful (horses), spreading thy web (of rays), and cutting down the black abode (of night), the tremulous rays of the sun throw off the darkness which is spread like a skin over the firmament.

"The divine Savitri displays his banner on high, diffusing light through all worlds, contemplating (all things), the Sun has filled heaven and earth and the firmament with his rays."

The hymn concludes by wondering what is the power by which the sun travels, and whether any one has truly beheld the "collective pillar of heaven" which "sustains the sky."

The following hymn, in which the sun is again called *Sûrya*, has been translated into verse by Mr. Griffith, principal of the College at Benares

Risen in majestic blaze,
Lo! the universe's eye;
Vast and wondrous host of rays
Shine brightly in the sky.
Soul of all that moveth not,
Soul of all that moves below,
Lighteth he earth's gloomiest spot,
And the heavens are all aglow!

See, he followeth the Dawn
Brilliant in her path above,
As a youth by beauty drawn
Seeks the maiden of his love!
Holy men and pious sages
Worship now the glorious Sun,
For by rites ordained for ages
Shall a good reward be won.

Look ! his horses mounted high,
Good of limb, and swift, and strong,
In the forehead of the sky
Run their course the heaven along !
Praise to his steeds be given,
Racing o'er the road of heaven !

Such the majesty and power,
Such the glory of the Sun,
When he sets at evening hour,
The worker leaves his task undone :
His steeds are loosed, and over all
Spreadeth Night her gloomy pall.

When he rides in noon-tide glow,
Blazing in the nation's sight,
The skies his boundless glory show,
And his majesty of light ;
And when he sets his absent might
Is felt in thickening shades of night

Hear us, O ye gods, this day !
Hear us, graciously, we pray !
As the sun his state begins,
Free us from all horous sins !
Mitra, Varuna, Aditi !
Hear, O hear us graciously !
Powers of ocean, earth, and air,
Listen, listen to our prayer !



LADY HESTER STANHOPE AND THE ARABS.

For hours and hours this wondrous, white woman poured forth her speech, for the most part concerning sacred and profane mysteries; but every now and then she would stay her lofty flight, and swoop down upon the world again: whenever this happened, I was interested in her conversation.

She adverted more than once to the period of her lost sway amongst the Arabs, and mentioned some of the circumstances that aided her in obtaining influence with the wandering tribes. The Bedouin, so often engaged in irregular warfare, strains his eyes to the horizon in search of a coming enemy, just as habitually as the sailor keeps his "bright look-out" for a strange sail. In the absence of telescopes, a far-reaching sight is highly valued, and Lady Hester Stanhope had this power. She told me that on one occasion when there was good reason to expect hostilities, a far-seeing Arab created great excitement in the camp by declaring that he could distinguish some moving objects upon the very farthest point within the reach of his eyes. Lady Hester was consulted, and she instantly assured her comrades in arms that there were indeed a number of horses within sight, but that they were without riders. The assertion proved to be correct; and from that time forth, her superiority over all others, in respect of far sight, remained undisputed.

Lady Hester related this other anecdote of her Arab life. It was when the heroic qualities of the Englishwoman were just beginning to be felt amongst the people of the desert, that she was marching, one day, along with the forces of the tribe to which she had allied herself. She perceived that preparations for an engagement were going on; and upon her making inquiry as to the cause, the Sheikh at first affected mystery and concealment, but at last confessed that war had been declared against his tribe, on account of its alliance with the English princess,

and that they were now unfortunately about to be attacked by a very superior force. He made it appear that Lady Hester was the sole cause of hostility betwixt his tribe and the impending enemy, and that his sacred duty of protecting the Englishwoman whom he had admitted as his guest, was the only obstacle which prevented an amicable settlement of the dispute.

The Sheik hinted that his tribe was likely to sustain an almost overwhelming blow; but that no fear of the consequences, however terrible to him and his whole people, should induce him to dream of abandoning his illustrious guest. The heroine instantly took her part; it was not for her to be a source of danger to her friends, but rather to her enemies; so she resolved to turn away from the people, and trust for help to none, save only her haughty self. The Sheiks affected to dissuade her from so rash a course, and fairly told her, that although they (having been freed from her presence) would be able to make good terms for themselves, yet that there were no means of allaying the hostility felt towards her; and that the whole face of the desert would be swept by the horsemen of her enemies so carefully as to make her escape into other districts almost impossible. The brave woman was not to be moved by terrors of this kind; and, bidding farewell to the tribe which had honoured and protected her, she turned her horse's head, and rode straight away without friend or follower.

Hours had elapsed, and for some time she had been alone, when her quick eye perceived some horsemen in the distance. The party came nearer and nearer; soon it was plain that they were making towards her; and presently some hundreds of Bedouins, fully armed, galloped up to her, ferociously shouting, and apparently intending to take her life at the instant with their pointed spears. Her face at the time was covered with the yashmack,* according to Eastern usage; but at the

* *Yashmack*, a mask or covering of the face.

moment when the foremost of the horsemen had all but reached her with their spears, she stood up in her stirrups, withdrew the yashmack that veiled the terrors of her countenance, waved her arms slowly and disdainfully, and cried out with a loud voice, "Avant!" *

The horsemen recoiled from her glance, but not in terror. The threatening yells of the assailants were suddenly changed for loud shouts of joy and admiration at the bravery of the stately Englishwoman, and festive gunshots were fired on all sides around her honoured head. The truth was, that the party belonged to the tribe with which she had allied herself, and that the threatened attack, as well as the pretended apprehension of an engagement, had been contrived for the mere purpose of testing her courage. The day ended in a great feast, prepared to do honour to the heroine; and from that time her power over the minds of the people grew rapidly. Lady Hester related this story with great spirit; and I recollect that she put up her yashmack for a moment in order to give me a better idea of the effect which she produced by suddenly revealing the awfulness of her countenance.

Kinglake.

* She spoke it, I dare say, in English. The words would not be less effective for being spoken in an unknown tongue. Lady Hester, I believe, never learnt Arabic with a perfect accent.



THE BIRDCATCHER AND HIS CANARY.

In the town of Cleves,* an English gentleman was residing with a Prussian family, during the time of the fair, which we shall pass over, having nothing remarkable to distinguish it from other annual meetings where people assemble to stare at, cheat each other, and divert themselves, and to spend the year's savings in buying those bargains which would have been probably better bought at home.

One day, after dinner, as the dessert was just brought on the table, the travelling German musicians, who commonly attend the houses at these times, presented themselves, and were suffered to play. Just as they were making their bows for the money they had received for their display, a birdcatcher, who had rendered himself famous for educating and calling forth the talents of the feathered race, made his appearance.

The musicians, who had heard of this birdcatcher's fame, asked permission to stay; and the master of the house, who had a great share of good-nature, indulged their curiosity—a curiosity, indeed, in which every one participated; for all that we had heard or seen of learned pigs, goats, dogs, and horses, were said to be excelled by the wonderful wisdom which distinguished this birdcatcher's canary.

The canary was produced, and the owner, placing him upon his forefinger, addressed him in the following manner: “My jewel, you are now in the presence of persons of great sagacity and honour; take care you do not deceive the expectations they have conceived of you from the world's report. You have won laurels: beware, then, of erring. In a word, conduct yourself like the jewel of the canary birds, as you certainly are.”

At this time the bird seemed to listen, and indeed placed himself in the true attitude of attention, sloping

* Cleves, near Magdeburg, Prussia.

his head to the ear of the man, and then distinctly nodding twice when his master left off speaking; and, if ever nods were intelligible and promissory, those certainly were.

"That's good," said the master, pulling off his hat to the bird. "Now, then, let us see if you are a canary of honour. Give us a tune." The canary sang.

"Pshaw! that's too harsh; 'tis the note of a raven, with a hoarseness upon him; something pathetic." The canary whistled as if his little throat were changed to a lute.

"Faster," says the man, "slower: very well! what is this foot about, and this little head? No wonder you are out, when you forget your time. That's a jewel: bravo! bravo! my little man!"

All that he was ordered, or reminded of, did but excite admiration. His head and foot beat time, humoured the variations both of tone and movement: and "the sound was a just echo of the sense," according to the stricter law of poetical and of musical composition.

"Bravo! bravo!" re-echoed from all parts of the dining-room. The musicians declared the canary is a greater master of music than any of their band.

"And do you not show your sense of this civility, sir?" cried the birdcatcher, with an angry air. The canary bowed most respectfully, to the great delight of the company.

His next achievement was going through the martial exercise with a straw gun; after which, "My poor jewel," says the owner, "thou hast had hard work, and must be a little weary; a few performances more and thou shalt repose. Show the ladies how to make a salaam." The bird here crossed his taper legs, and sank and rose with an ease and grace that would have put half our young ladies to the blush.

"That will do, my bird! and now a bow, head and foot corresponding." This also she did with a grace that any young gentleman might have envied.

"Let us finish with a hornpipe, my brave little fellow; that's it; keep it up, keep it up!"

The activity, glee, spirit, and accuracy with which this last order was obeyed, wound up the applause, in which all the musicians joined, to the highest pitch of admiration. "Jewel" himself seemed to feel the sacred thirst of fame, and shook his little plumes, and carolled a song of praise, that sounded like the conscious notes of victory.

"Thou hast done all my biddings bravely," said the master, caressing his feathered servant: "now then, take a nap, while I take thy place."

Hereupon the canary went into a counterfeited slumber, first shutting one eye, then the other, then nodding, then dropping so much on one side, that the hands of several of the company were stretched out to save him from falling; and just as those hands approached his feathers, suddenly recovering, and dropping as much on the other side.

At length sleep seemed to fix him in a steady posture, whereupon the owner took him from his finger and laid him flat on the table, where the man assured us he would remain in a good sound sleep, while he himself would have the honour to do his best to fill up the interval.

While the little bird was thus exhibiting, a huge black cat, which, doubtless, had been on the watch from some unobserved corner, sprang upon the table, seized the poor canary in its mouth, and rushed out of the window in despite of all opposition. Though the dining-room was emptied in an instant, it was a vain pursuit; the life of the bird was gone, and its mangled body was brought in by the unfortunate owner in such dismay, accompanied by such looks and language, as would have awakened pity even in a savage. He spread himself half length over the table, and mourned his canary-bird with most unaffected sorrow.

It is needless to observe, that every one of the company sympathised with him, but none more so than

the band of musicians. It was really a banquet to see these people gathering themselves into a knot, and, after whispering and wiping their eyes and cheeks, depute one from among them to be the medium of conveying into the pocket of the bird-man the very contribution they had just before received for their own efforts.

Having wrapped up their contribution, they contrived to put it into the poor man's pocket. As soon as he became aware of what they had done, he took from his pocket the little parcel they had rolled up, and brought out with it, by an unlucky accident, another little bag, at the sight of which he was extremely agitated, for it contained the canary-seed, the food of the "dear lost companion of his heart."

There is no giving language to the effect of this trifling circumstance upon the poor man; he throw down the contribution-money that he had brought from his pocket along with it, not with an ungrateful but a desperate hand. He opened the bag, which was fastened with red tape, and taking out some of the seed, put it to the very bill of the lifeless bird, exclaiming. "No, poor Jewell! no; thou canst not peck any more out of this hand that has been thy feeding-place so many years: thou canst not remember how happy we both were when I bought this bag full for thee!"—*Pratt.*



EXPRESSION OF THE EYE.

A cow can bid her calf, by secret signal, probably of the eye, to run away, or to lie down and hide itself. The jockeys say of certain horses, that "they look over the whole ground." The out-door life, and hunting and labour, give equal vigour to the *human* eye. A farmer looks out at you as strong as the horse; his eye-beam is like the stroke of a staff. An eye can threaten like a loaded, levelled gun, or can insult like kissing or kicking; or, in its altered mood, by means of kindness it can make the heart dance with joy.

The eye obeys exactly the action of the mind. When a thought strikes us, the eyes fix, and remain gazing at a distance; in enumerating the names of persons or of countries, as France, Germany, Spain, Turkey, the eyes wink at each new name. There is no nicety of learning sought by the mind which the eye does not vie in acquiring. "An artist," said Michael Angelo, "must have his measuring tools, not in the hand, but in the eye;" and there is no end to the catalogue of its performances, whether in indolent vision—that of health and beauty; or in strange vision—that of heart and labour.

Eyes are bold as lions—roving, running, leaping, here and there, far and near. They speak all languages. They wait for no introduction: they are not conventional; ask no leave of age or rank; they respect neither poverty nor riches, neither learning nor power, nor virtue, nor sex, but intrude and come again, and go through and through you in a moment of time. What inundation of life and thought is discharged from one soul into another, through them. The glance is natural magic. The mysterious communication established in a company between two entire strangers moves all the springs of wonder. The communication by the glance is in the greatest part not subject to the control of the will. It is the bodily symbol of identity of nature.

We look into the eyes to know if this other form is another self, and the eyes will not lie, but make a faithful confession what inhabitant is there. The revelations are sometimes terrific. The confession of a low usurping devil is there made, and the observer shall seem to feel the stirring of owls, and bats, and horned hoofs, where he looked for innocence and simplicity. 'Tis remarkable, too, that the spirit that appears at the windows of the house does at once invest itself in a new form of its own to the mind of the beholder.

The eyes of men converse as much as their tongues, with the advantage that the ocular dialect needs no dictionary, but is understood all the world over. When the eyes say one thing, and the tongue another, a practised man relies on the language of the first. If the man is off his centre, the eyes show it. You can read in the eyes of your companion whether your argument hits him, though his tongue will not confess it. There is a look by which a man shows he is going to say a good thing, and a look when he has said it. Vain and forgotten are all the fine offers and offices of hospitality, if there is no holiday in the eye. How many furtive inclinations are avowed by the eye, though dissembled by the lips! One comes away from a company in which, it may easily happen, he has said nothing, and no important remark has been addressed to him, and yet, if in sympathy with the society, he shall not have a sense of this fact, such a stream of life has been flowing into him, and out from him through the eyes.

There are eyes, to be sure, that give no more admission into the man than berries. Others are liquid and deep wells that a man might fall into; others are aggressive and devouring, seem to call out the police, take all too much notice, and require crowded streets, and security of millions, to protect individuals against them. The military eye I meet, now darkly sparkling under clerical, now under rustic brows. 'Tis the city of Lacedæmon; 'tis a stack of bayonets. There are asking eyes, assert-

ing eyes, prowling eyes, and eyes full of fate--some of good and some of sinister omen. The alleged power to charm down insanity, or ferocity in beasts, is a power behind the eye. 'Tis very certain that each man carries in his eye the exact indication of his rank in the immense scale of men, and we are always learning to read it. A complete man should need no auxiliaries to his personal presence. Whoever looked on him would consent to his will, being certified that his aims were generous and universal. The reason why men do not obey us, is because they see the mind at the bottom of our eye.—*Emerson*.

DANGERS OF THE DEEP.

'Tis pleasant by the cheerful hearth to hear
Of tempests, and the dangers of the deep,
And pause at times, and feel that we are safe;
Then listen to the perilous tale again,
And, with an eager and suspended soul,
Woo terror to delight us. But to hear
The roaring of the raging elements;
To know all human skill, all human strength,
Avail not; to look around, and only see
The mountain-wave incumbent, with its weight
Of bursting waters, o'er the reeling bark;—
Ah, me! this is indeed a dreadful thing,
And he who hath endured the horror once
Of such an hour, doth never hear the storm
Howl round his home but he remembers it,
And thinks upon the suffering mariner.

Southey.

A WILD NIGHT AT SEA.

A dark and dreary night; people nestling in their beds, or circling late about the fire; want, colder than charity, shivering at the street corners; church towers humming with the faint vibration of their own tongues, from their snug belfries, strike 'One!' The earth covered with a sable pall, as for the burial of yesterday; the clumps of dark trees, their giant plumes of funeral feathers waving sadly to and fro; all hushed, all noiseless, and in deep repose, save the swift clouds that skim across the moon, and the cautious wind, as creeping after them upon the ground, it stops to listen, and goes rustling on, and stops again, and follows, like a savage in the chase.

Whither go the clouds and winds so eagerly? If, like guilty spirits, they repair to some dread conference with powers like themselves, in what wild region do the elements hold council, or where unbend in terrible sport? Here! Free from that cramped prison called earth, and out upon the waste of waters;—here, roaring, raging, shrieking, howling all night long. Hither come the sounding voices from the caverns on the coast of that small island, sleeping a thousand miles away so quietly in the midst of angry waves; and hither, to meet them, rush the blasts from unknown desert places of the world. Here, in the fury of their unchecked liberty, they storm and buffet with each other, until the sea, lashed into passion like their own, leaps up in ravings mightier than theirs, and the whole scene is whirling madness.

On, on, on, over the countless miles of angry space roll the long, heaving billows. Mountains and caves are here, and yet are not; for what is now the one is now the other; then all is but a boiling heap of rushing water, pursuit, and flight, and mad return of wave on wave, and savage struggling, ending in a spouting up of foam that whitens the

black night; incessant change of place, and form, and hue; constancy in nothing but eternal strife. On, on, on, they roll, and darker grows the night, and louder howl the winds, and more clamorous and fierce become the million voices in the sea, when the wild cry goes forth upon the storm, "A ship!" Onward she comes, in gallant combat with the elements, her tall masts trembling, and her timbers starting on the strain; onward she comes, now high upon the curling billows, now low down in the hollows of the sea, as hiding for the moment from its fury; and every storm voice in the air and water cries more loudly yet, "A ship!"

Still she comes striving on; and at her boldness and the spreading cry, the angry waves rise up above each other's hoary heads to look; and round about the vessel, far as the mariners on her decks can pierce into the gloom, they press upon her, forcing each other down, and starting up and rushing forward from afar, in dreadful curiosity. High over her they break, and round her surge and roar, and, giving place to others, meaningly depart, and dash themselves to fragments in their baffled anger.

Still she comes onward bravely. Though the eager multitude crowd thick and fast upon her all the night, and dawn of day discovers the untiring train yet bearing down upon the ship in an eternity of troubled water, onward she comes, with dim lights burning in her hull, and people there asleep; as if no deadly element were peering in at every seam and chink, and no drowned seamen's grave, with but a plank to cover it, were yawning in the unfathomable depths below. —*Dickens.*



THE STARLING; OR, LIBERTY.

As for the Bastille,—terror is in the very word. "Make the most of it you can," said I to myself, "the Bastille is but another word for a tower, and a tower is but another word for a house you can't get out of. Mercy on the gouty! for they are in it twice a year. But with nunc shillings a day, and pen and ink and paper, and patience, albeit a man can't get out, he may do very well within, at least for a month or six weeks; at the end of which, if he is a harmless fellow, his innocence appears, and he comes out a better and wiser man than he went in."

I had some occasion (I forget what) to step into the courtyard, as I settled this account; and remember I walked downstairs in no small triumph at the conceit of my reasoning. "Beshrow the *sombre* pencil," said I, vauntingly, "for I envy not its power, which paints the evils of life with so hard and deadly a colouring. The mind sits terrified at the objects she has herself magnified, and blackened: reduce them to their proper size, she overlooks them. 'Tis true," said I, correcting the proposition, "the Bastille is not an evil to be despised. But strip it of its towers, fill up the trench, unbarricado the doors, call it simply a confinement, and suppose 'tis some tyrant of a distemper, and not of a man, which holds you in it, the evil vanishes, and you bear the other half without complaint."

I was interrupted in the course of this soliloquy, by a voice which I took to be that of a child, which complained "it could not get out." I looked up and down the passage, and seeing neither man, woman, nor child, I went on without farther attention.

On my return back through the passage, I heard the same words repeated twice over; and looking up, I saw it was a starling hung in a little cage. "I can't get out, I can't get out," said the starling.

I stood looking at the bird; and to every person who came through the passage, it ran fluttering to the side

towards which they approached it, with the same lamentation of its captivity. "I can't get out," said the starling. "God help thee!" said I; "but I'll let thee out, cost what it will;" so I turned about the cage to find the door; it was twisted and double twisted so fast with wire, there was no getting it open without pulling the cage to pieces. I took both hands to it.

The bird flew to the place where I was attempting his deliverance, and, thrusting his head through the trellis, pressed his breast against it, as if impatient. "I fear, poor creature," said I, "I cannot set thee at liberty." "No," said the starling; "I can't get out, I can't get out," said the starling.

I now I never had my affections more tenderly awakened; nor do I remember an incident in my life where the dissipated spirits, to which my reason had been a bubble, were so suddenly called home. Mechanical as the notes were, yet so true in tune to nature were they chanted, that in one moment they overthrew all my systematic reasonings upon the Bastile; and I heavily walked upstairs, unsaying every word I had said in going down them.

"Disguise thyself as thou wilt, still, Slavery," said I, "still thou art a bitter draught! and though thousands in all ages have been made to drink of thee, thou art no less bitter on that account. 'Tis thou, thrice sweet and gracious goddess," addressing myself to *Liberty*, "whom all in public or in private worship, whose taste is grateful, and ever will be so, till Nature herself shall change. No tint of words can spot thy snowy mantle, or chymic power turn thy sceptre into iron: with thee to smile upon him as he eats his crust, the swain is happier than his monarch, from whose court thou art exiled. Gracious Heaven!" cried I, kneeling down upon the last step but one in my ascent, "grant me but health, thou great Bestower of it, and give me but this fair goddess as my companion, and shower down thy mitres, if it seems good unto thy Divine providence, upon those heads which are aching for them!"

The bird in his cage pursued me into my room. I sat down close to my table, and leaning my head upon my hand, I began to figure to myself the miseries of confinement. I was in a right frame for it, and so I gave full scope to my imagination.

I was going to begin with the millions of my fellow-creatures, born to no inheritance but slavery: but finding, however affecting the picture was, that I could not bring it near me, and that the multitude of sad groups in it did but distract me, I took a single captive, and having first shut him up in his dungeon, I then looked through the twilight of his grated door to take his picture.

I beheld his body half wasted away with long expectation and confinement, and felt what kind of sickness of the heart it was which arises from hope deferred. Upon looking nearer, I saw him pale and feverish: in thirty years the western breeze had not once fanned his blood; he had seen no sun, no moon, in all that time; nor had the voice of friend or kinsman breathed through his lattice! His children—

But here my heart began to bleed, and I was forced to go on with another part of the portrait.

He was sitting upon the ground, upon a little straw in the furthest corner of his dungeon, which was alternately his chair and bed; a little calendar of small sticks were laid at the head, notched all over with the dismal days and nights he had passed there: he had one of these little sticks in his hand, and with a rusty nail he was etching another day of misery to add to the heap. As I darkened the little light he had, he lifted up, a hopeless eye towards the door, then cast it down—shook his head, and went on with his work of affliction. I heard his chains rattling upon his legs, as he turned his body to lay his little stick upon the bundle. He gave a deep sigh. I saw the iron enter into his soul. I burst into tears. I could not sustain the picture of confinement which my fancy had drawn.—*Sterne*.

THE PARROT.

The deep affections of the breast,
That Heaven to living things imparts,
Are not exclusively possessed
By human hearts.

A parrot from the Spanish main,
I nill young, and early crept, came o'er,
With bright wings, to the bleak domain
Of Mull's shore.

To sunny groves where he had won
His plumage of resplendent hue,
His native fruits, and skies, and sun,
He bade adieu

For there he breathed the smoke of turf,
A heathery land and misty sky,
And turned on rock and ragged surf
His golden eye.

But petted in our climate cold,
He lived and chattered many a day;
Until with age, from green and gold,
His wings grew grey

At last, when blind and seemingly dumb,
He scolded, laughed and spoke no more,
A Spanish stranger chanced to come
To Mull's shore

He hailed the bird in Spanish speech,
The bird in Spanish speech replied,
Flapped round his cage with joyous screech,
Dropt down, and died.

Campbell.



THE STORK.

So punctual is the arrival and departure of the various migratory birds, that to this day the Persians, as well as the ancient Arabs, often form their almanacks on their movements. Thus, the beginning of the singing of the nightingales was a commencement of a festival, welcoming the return of warm weather; while the coming of the storks was the period of another, announcing their joy at the departure of winter. The expression, "the stork in the heaven," is more applicable than at first appears, for even when out of sight, its pathway may be traced by the loud and piercing cries, peculiar to those of the New as well as of the Old World. In America, too, its migrations are equally regular, passing its immense periodical journeys at such a prodigious height as to be seldom observed.

"In the middle of April," says a traveller in the Holy Land, "while our ship was riding at anchor under mount Carmel, we saw three flights of these birds, each of which took up more than three hours in passing us, extending itself, at the same time, more than half a mile in breadth." They were then leaving Egypt, and steering towards the north-east of Palestine, where it seems, from the account of another eye-witness, they abound in the month of May. "Returning from Cana to Nazareth," he observes, "I saw the field so filled with flocks of storks, that they appeared quite white with them; and when they rose and hovered in the air, they seemed like clouds. The respect paid in former times to these birds is still shown; for the Turks, notwithstanding their rocklessness in shedding human blood, have a more than ordinary regard for storks, looking upon them with an almost reverential affection."

In the neighbourhood of Smyrna, and indeed throughout the whole of the Ottoman dominions, wherever the bird abides during his summer visits, he is welcomed. They call him their friend and their brother,—the friend

and brother exclusively of the Moslem race: entertaining a belief that wherever the influence of their religion prevailed, he would still bear them company, and it might seem that these sagacious birds are well aware of this predilection; for singularly enough, a recent traveller, who met with them in incredible numbers in Asia Minor, observed that, although they built on the mosques, minarets, and Turkish houses, their nests were never erected on a Christian roof. In the Turkish quarters they were met in all directions, strutting about most familiarly, mixing with the people in the streets. Nothing can be more interesting than the view of an assemblage of their nests. Divided as they always are, into pairs, sometimes only the long elastic neck of one of them is to be seen peering from its cradle of nestlings, the mate standing by on one of his long slim legs, and watching with every sign of the closest affection. Other couples on the adjacent walls are fondly entwining their pliant necks, the one sometimes bending her neck over her back, and burying her bill in the soft plumage, while her companion, clacking his long beak with a peculiar sharp and monotonous sound, raises her head and embraces it with a quivering delight. From the holes and crannies of the walls, below the stork's nest, thousands of little blue turtle-doves flit in all directions, keeping up an incessant cooing by day and night.

At Fez, on the coast of Barbary, there is a rich hospital, expressly built, for the sole purpose of assisting and nursing sick cranes and storks, and of burying them when dead! This respect arises from a strange belief, handed down from time immemorial, that the storks are human beings in that form, men from some distant islands, who at certain seasons of the year, assume the shape of these birds, that they may visit Barbary, and return at a fixed time to their own country, where they resume the human form. It has been conjectured that this tradition came originally from Egypt, where the storks are held in equal respect. By the

Jews, the storks are also respected, though for a different reason: they call it *Chaseda*,—which in Hebrew signifies piety or mercy,—from the tenderness shown by the young to the older birds, who when the latter were feeble and sick, would bring them food.

This affection, however, appears to be mutual, for the parent birds have a more than ordinary degree of affection for their young, and have been known to perish rather than desert them. An attachment of this sort once occasioned the death of an old stork, at the burning of the city of Delft, in Holland. When the flames approached her nest, situated on a house-top, she exerted herself to the utmost to save her young; but finding every effort useless, she remained and perished with them.

Stanley.

POLICY OF WARREN HASTINGS.

The internal administration of Warren Hastings, with all its blemishes, gives him a title to be considered as one of the most remarkable men in our history. He dissolved the double government. He transferred the direction of affairs to English hand. Out of a frightful anarchy he educed at least a rude and imperfect order. The whole organisation by which justice was dispensed, revenue collected, peace maintained throughout so vast and populous a territory, was formed and superintended by him. He boasted that every public office, without exception, which existed when he left Bengal, was his creation.

It is quite true that this system, after all the improvements suggested by the experience of sixty years, still needs improvement, and that it was at first far more defective than it now is. But whoever seriously considers what it is to construct from the beginning the whole of a machine so vast and complex as a government, will allow that what Hastings effected deserves high admiration. To compare the most celebrated European ministers to him, seems to us as unjust as it would be to compare the

best baker in London with Robins in Crusoe, who, before he could bake a single loaf, had to make his plough and his harrow, his fences and his scarecrows, his sickle and his flail, his mill and his oven.

The just fame of Hastings rises still higher when we reflect that he was not bred a statesman, that he was sent from school to a counting-house, and that he was employed during the prime of his manhood as a commercial agent, far from all intellectual society.

Nor must we forget that all, or almost all, to whom, when placed at the head of affairs, he could apply for assistance were persons he owed as little as himself, or less than himself to education. A minister in Europe finds himself on the first day on which he commences his functions, surrounded by experienced public servants, the depositories of official traditions. Hastings had no such help. His own reflection, his own energy, were to supply the place of all Downing Street and Somerset House. Having had no facilities for learning, he was forced to teach. He had first to form himself and then to form his instruments and this not in a single department, but in all the departments of the administration.

It must be added that, while engaged in this most arduous task, he was continually troubled by orders from home and he was greatly borne down by a majority in council. The preservation of an empire from a formidable combination of foreign enemies; the construction of a government in all its parts, were accomplished by him while every ship brought out bales of censure from his employers, and while the records of every consultation were filled with verimonious minutes by his colleagues. But the temper of Hastings was equal to almost any trial. It was not sweet but it was calm. Quick and vigorous as his intellect was, the patience with which he endured the most cruel vexations till a remedy could be found, resembled the patience of stupidity. He seems to have been capable of resentment bitter and long en-

during, yet his resentment so seldom hurried him into any blunder, that it may be doubted whether what appeared to be revenge was anything but policy.

The effect of this singular equanimity was, that he always had the full command of all the resources of one of the most fertile minds that ever existed. Accordingly no complication of perils and embarrassments could perplex him. For every difficulty he had a contrivance ready, and, whatever may be thought of the prudence and humanity of some of his contrivances, it is certain that they seldom failed to serve the purpose for which they were designed.

Milner.

A TRUE MAN

He who pays his benevolence
That yet is not another's will,
Whose honour is his honest thought,
And simple truth his utmost skill;
Who says as he is, and is as he says,
Who calls his fellow-creatures by their names,
And leads them to the well, and to the light,
Of public fame or private breath;
Who can be true that charity forbids
Or vice to never more offend;
He will not counsel a villain's deed,
Nor rule of state, but rule of right;
Who hath his life from many a misdeed
Who can be true as his conscience bids,
Who states no other flattery but
No man's deceptions are his ill;
Who would do the life and duty of a man,
More of his race than of his kind;
And cut it out the human soul
With a dagger as black as lead;
This man is free from every kind
Of hypocrite or knave's deceit;
Lord of himself though he be of the land,
And having nothing, yet hath all.

II

Milner, evil report

YOUTHFUL PRESUMPTION.

When Glaucon, the son of Ariston, not yet twenty years old, was eloquently bent on making a speech to the people of Athens, and could not be stopped by his other friends and relations, even though he was dragged from the speaker's bench* by main force and well laughed at, Socrates did what they could not do, and by talking with him, checked this ambitious attempt. "So, Glaucon," said he, "it appears that you intend to take a leading part in the affairs of the State"—"I do, Socrates," he replied— "And certainly," said Socrates, "if there be any brilliant position among men, *that* is one for if you attain this object, you may do what you like, serve your friends, raise your family, exalt your country's power, become famous in Athens, in Greece and perhaps even among the barbarians,† so that when they see you they will look at you as a wonder, as was the case with Themistocles.

This kind of talk took Glaucon's fancy, and he stayed to listen. Socrates then went on: "Of course, in order that the city may thus honour you, you must promote the benefit of the city."—"Of course," Glaucon said—"And now," say Socrates, "do not be alarmed of your confidence, but tell me, of all love, what is the first point in which you will promote the city's benefit?" And when Glaucon he stated it thus, a having to consider in what point he should begin his performances, Socrates said: "Of course, if you were to have to benefit the family of a friend, the first thing you would think of would be to make him richer, and in like manner perhaps you would try to make the city richer."—"Just so," said he—"Then of course, you would increase the revenues of the city?"—"Probably," said he—"Good, tell me, now what are the revenues of the city, and

* *Genetium tubum oratoris platform, hustings.*

† *Barbarians, foreigners.*

what they arise from. Of course you have considered these points with a view of making the resources which are scanty become copious, and of finding some substitute for those which fail."—"In fact," said Glaukon, "those are points which I have not considered."—"Well, if that be the case," said Socrates, "tell me at least what are the expenses of the city, for of course your plan is to retrench anything that is superfluous in these."—"But, indeed," said he, "I have not given my attention to this matter."—"Well, then," said Socrates, "we will put off for the present this undertaking of making the city richer; for how can a person undertake such a matter without knowing the income and the outgoings?"

Glaukon of course must by this time have had some misgivings, at having his fitness for a prime minister tested by such questioning as this. However, he does not yield at once. "But, Socrates," he says, "there is a way of making the city richer by taking wealth from our enemies."—"Doubtless there is," said Socrates, "if you are stronger than they; but if that is not so, you may by attacking them lose even the wealth you have."—"Of course that is so," says Glaukon.—"Well then," said Socrates, "in order to avoid this mistake, you must know the strength of the city and of its rivals. Tell us first the amount of our infantry, and of our naval force, and then that of our opponents."—"Oh, I cannot tell you that off-hand and without reference."—"Well, but if you have made memoranda on these subjects, fetch them. I should like to hear."—"No; in fact," he said, "I have no written memoranda on this subject."—"So. Then we must at any rate not begin with war; and indeed it is not unlikely that you have deferred this as too weighty a matter for the very beginning of your statesmanship. Tell us then about our frontier fortresses, and our garrisons there, that we may introduce improvement and economy by suppressing the superfluous ones."—Here Glaukon has an opinion, probably the popular one of the day. "I would," he says, "suppress them all. I know that they

guard so ill there, that the produce of the country is stolen."—Socrates suggests that the abolition of guards altogether would not remedy this, and asks Glaukon whether he knows, by personal examination that they keep guard ill.—"No," he says, "but I guess it."—Socrates then suggests that it will be best to defer this point also, and to act when we do not *guess*, but *know*.—Glaukon assents that this may be the better way.—Socrates then proceeds to propound to Glaukon, in the same manner, the revenue which Athens derived from the silver mines, and the causes of its decrease—the supply of corn, of which there was a large import into Attica—and Glaukon is obliged to allow that these are affairs of formidable magnitude.—But yet Socrates urges, "No one can manage even one household without knowing and attending to such matters. Now as it must be more difficult to provide for ten thousand houses than for one," he remarks, that "it may be best for him to begin with one;" and suggests, "as a proper case to make the experiment upon, the household of Glaukon's uncle, Charmides, for he really needs help"—"Yes," says Glaukon, "and I would manage my uncle's household, but he will not let me." And then Socrates comes in with an overwhelming retort. "And so," he says, "though you cannot persuade your uncle to allow you to manage for *him*, you still think you can persuade the whole body of the Athenians, your uncle among the rest, to allow you to manage for *them*." And he then adds the moral of the conversation. "What a dangerous thing it is to meddle, either in word or in act, with what one does not know."

Whewell's *Plato*.



SIR WALTER SCOTT.

The conversation of Scott was frank, hearty, picturesque, and dramatic. During the time of my visit, he inclined to the comic rather than the grave, in his anecdotes and stories; and such I was told was his general inclination. He relished a joke, or a trait of humour in social intercourse, and laughed with right good will. He talked not for effect, nor display, but from the flow of his spirits, the stories of his memory, and the vigour of his imagination. He had a natural turn for narration, and his narratives and descriptions were without effort, yet wonderfully graphic. He placed the scene before you like a picture; he gave the dialogue with the appropriate dialect or peculiarities, and described the appearance and characters of his personages with that spirit and felicity evinced in his writings. Indeed, his conversation reminded me continually of his novels; and it seemed to me that, during the whole time I was with him, he talked enough to fill volumes, and that they could not have been filled more delightfully.

He was as good a listener as talker, appreciating everything that others said, however humble might be their rank or pretensions, and was quick to testify his perception of any point in their discourse. He arrogated nothing to himself, but was perfectly unassuming and unpretending, entering with heart and soul into the business, or pleasure, or, I had almost said, folly, of the hour and the company. No one's concerns, no one's thoughts, no one's opinions, no one's tastes and pleasures, seemed beneath him. He made himself so thoroughly the companion of those with whom he happened to be, that they forgot for a time his vast superiority, and only recollected and wondered when all was over, that it was Scott with whom they had been on such familiar terms and in whose society they had felt so perfectly at their ease.

It was delightful to observe the generous spirit in which he spoke of all his literary contemporaries, quoting the beauties of their works; and this, too, with respect to persons with whom he might have been supposed to be at variance in literature or politics. Jeffrey, it was thought, had ruffled his plumes in one of his reviews, yet Scott spoke of him in terms of high and warm eulogy, both as an author and as a man.

His humour in conversation, as in his works, was genial and free from all severity. He had a quick perception of faults and foibles, but he looked upon human nature with an indulgent eye, relishing what was good and pleasant, tolerating what was frail, and pitying what was evil. It is this beneficent spirit which gives such an air of *bonhomie** to Scott's humour throughout all his works. He played with the foibles and errors of his fellow-beings, and presented them in a thousand whimsical and characteristic lights; but the kindness and generosity of his nature would not allow him to be a satirist. I do not recollect a sneer throughout his conversation any more than there is throughout his works.

Such is a rough sketch of Scott, as I saw him in private life, not merely at the time of the visit here narrated, but in the casual intercourse of subsequent years. Of his public character and merits all the world can judge. His works have incorporated themselves with the thoughts and concerns of the whole civilized world for a quarter of a century, and have had a controlling influence over the age in which he lived. But when did a human being ever exercise an influence more salutary and benignant? Who is there that, on looking back over a great portion of his life, does not find the genius of Scott administering to his pleasures, beguiling his cares, and soothing his lonely sorrows? Who does not still regard his works as a treasury of pure enjoyment, an armoury to which to resort in time of need, to find

* *Bonhomie*, geniality.

weapons with which to fight off the evils and the griefs of life? For my own part, in periods of dejection, I have hailed the announcement of a new work from his pen as an earnest of certain pleasure in store for me, and have looked forward to it as a traveller in a waste looks to a green spot at a distance, where he feels assured of solace and refreshment. When I consider how much he has thus contributed to the better hours of my past existence, and how independent his works still make me, at times, of all the world for my enjoyment, I bless my stars that cast my lot in his days, to be thus cheered and gladdened by the outpourings of his genius. I consider it one of the greatest advantages that I have derived from my literary career, that it has elevated me into genial communion with such a spirit; and as a tribute of gratitude for his friendship, and veneration for his memory, I cast this humble stone upon his cairn, which will soon, I trust, be piled aloft with the contributions of abler hands.

W. Irving.

STATE OF INDIA BEFORE ITS POSSESSION BY THE ENGLISH.

The empire which Baber and his Moguls reared in the sixteenth century was long one of the most extensive and splendid in the world. In no European kingdom was so large a population subject to a single prince, or so large a revenue poured into the treasury. The beauty and magnificence of the buildings erected by the sovereigns of Hindustan amazed even travellers who had seen St. Peter's. The innumerable retinues and gorgeous decorations which surrounded the throne of Delhi dazzled even eyes accustomed to the pomp of Versailles.

There can be little doubt that this great empire, powerful and prosperous as it appears on a superficial view, was yet, even in its best days, far worse governed than the worst governed parts of Europe now are. The administration was tainted with all the vices of Oriental

despotism, and with all the vices inseparable from the domination of race over race. The conflicting pretences of the princes of the royal house produced a long series of crimes and public disasters. Ambitious lieutenants of the sovereign sometimes aspired to independence. Fierce tribes of Hindus, impatient of a foreign yoke, frequently withheld tribute, repelled the armies of the government from the mountain fastnesses, and poured in arms on the cultivated plains. In spite, however, of much constant maladministration, in spite of occasional convulsions which shook the whole frame of society, this great monarchy on the whole retained, during some generations, an outward appearance of unity, majesty, and energy. But throughout the long reign of Aurungzebe, the state, notwithstanding all that the vigour and policy of the prince could effect, was hastening to dissolution. After his death, which took place in the year 1707, the ruin was fantastically rapid. Violent shocks from without co-operated with an incurable decay which was fast proceeding within, and in a few years the empire had undergone utter decomposition.

A succession of nominal sovereigns, sunk in indolence and debauchery, sauntered away life in secluded palaces, chewing opium, fondling concubines, and listening to buffoons. A succession of ferocious invaders descended through the western passes to prey on the defenceless wealth of Hindustan. A Persian conqueror crossed the Indus, marched through the gates of Delhi, and bore away in triumph those treasures of which the magnificence had astounded Roo and Bernier,—the Peacock throne, on which the richest jewels of Golconda had been disposed by the most skilful hands of Europe, and the inestimable "Mountain of Light," which after many strange vicissitudes, lately shone in the bracelet of Runjeet Sing, and is now destined to adorn the hideous idol of Orissa. The Affgan soon followed to complete the work of devastation which the Persian had begun. The warlike tribes of Rujpootana threw off the Mussulman yoke. A band of

mercenary soldiers occupied Rohilound. The Sikhs ruled on the Indus. The Jats spread dismay along the Jumna. The highlands which border on the western sea-coast of India poured forth a yet more formidable race, a race which was long the terror of every native power, and which, after many desperate and doubtful struggles, yielded only to the fortune and genius of England. It was under the reign of Aurangzobo that this wild clan of plunderers first descended from their mountains, and soon after his death every corner of his wide empire learned to tremble at the mighty name of the Mahrattas. Many fertile vice-royalties were entirely subdued by them. Their dominions stretched across the peninsula from sea to sea. Mahratta captains reigned at Poonah, at Gualior, in Guzerat, in Berar, and in Tanjore. Nor did they, though they had become great sovereigns, therefore cease to be freebooters. They still retained the predatory habits of their forefathers. Every region which was not subject to their rule was wasted by their incursions. Wherever their kettledrums were heard, the peasant threw his bag of rice on his shoulder, hid his small savings in his girdle, and fled with his wife and children to the mountains or the jungles, to the milder neighbourhood of the hyana and the tiger.

[It is now little more than a century since the English began to establish themselves in any force upon the peninsula of India; and they at present possess in that country a more extensive territory and a more numerous population than any European power can boast of. In no instance has the genius of the English and their courage shone forth more conspicuously than in their contest with the French for the empire of India. The numbers on both sides were always inconsiderable, but the two nations were fairly matched in the cabinet and in the field: the struggle was long and obstinate, and at the conclusion the French remained masters of a dismantled town, and the English of the grandest and most extensive colony that the world has ever seen. And this splendid acquisition is due to the genius and daring of a single man, and that man was Clive.]

THE BREATH OF LIFE.

What is all this process going on within us which we cannot do without, either day or night, which is so provided for by the Author of all things, that He has arranged that it shall be independent of all will? If we restrain our respiration, as we can to a certain extent, we should destroy ourselves. When we are asleep, the organs of respiration, and the parts that are associated with them, still go on with their action, so necessary is this process of respiration to us, this contact of air with the lungs.

I must tell you, in the briefest possible manner, what this process is. We consume food: the food goes through that strange set of vessels and organs within us, and is brought into various parts of the system, into the digestive parts especially; and alternately the portion which is so changed is carried through our lungs by one set of vessels, while the air that we inhale and exhale is drawn into and thrown out of the lungs by another set of vessels, so that the air and the food come close together, separated only by an exceedingly thin surface: the air can thus act upon the blood by this process, producing precisely the same results in kind as in the case of the candle.

Just as the candle combines with parts of the air, forming carbonic acid, and evolves heat; so in the lungs there is this curious, wonderful change taking place. The air entering, combines with the carbon (not carbon in a free state, but, as in this case, placed ready for action at the moment), and makes carbonic acid, and is so thrown out into the atmosphere, and thus this singular result takes place: we may thus look upon the food as fuel. Let me take that piece of sugar, which will serve my purpose. It is a compound of carbon, hydrogen, and oxygen, similar to a candle, as containing the same elements, though not in the same proportion; the proportions in sugar being as shown in this table:—

Carbon	.	.	.	.	.	.	72	
Hydrogen	.	.	.	.	.	.	11	} 99
Oxygen	.	.	.	.	.	.	88	

This is, indeed, a very curious thing, which you can well remember, for the oxygen and hydrogen are in exactly the proportions which form water, so that sugar may be said to be compounded of 72 parts of carbon and 99 parts of water; and it is the carbon in the sugar that combines with the oxygen carried in by the air in the process of respiration, so making us like candles; producing these actions, warmth, and far more wonderful results besides, for the sustenance of the system, by a most beautiful and simple process.

To make this still more striking, I will take a little sugar; or to hasten the experiment I will use some syrup, which contains about three-fourths of sugar and a little water. If I put a little oil of vitriol on it, it takes away the water, and leaves the carbon in a black mass. You see how the carbon is coming out, and before long we shall have a solid mass of charcoal, all of which has come out of sugar. Sugar, as you know, is food, and here we have absolutely a solid lump of carbon where you would not have expected it. And if I make arrangements so as to oxidize the carbon of sugar, we shall have a much more striking result. Here is sugar, and I have here an oxidizer,—a quicker one than the atmosphere; and so we shall oxidize this fuel by a process different from respiration in its form, though not different in its kind.

It is the combustion of the carbon by the contact of oxygen which the body has supplied to it. If I set this into action at once, you will see combustion produced.

What occurs in my lungs,—taking in oxygen from an outer source, namely, the atmosphere,—takes place here by a more rapid process.



THE BEGGAR AND HIS DOG.

Harley sat down on a large stone to take out a little pebble from his shoe, when he saw at some distance a beggar approaching him. He had on a loose sort of coat, mended with different coloured rags, amongst which the blue and the russet were predominant. He had a short knotty stick in his hand, and on the top of it was stuck a ram's horn; his knees (though he was no pilgrim) had worn the stuff off his breeches; he wore no shoes, and his stockings had entirely lost that part of them which should have covered his feet and ankles; in his face, however, was the plump appearance of good humour; he walked a good round pace, and a crooked-legged dog trotted at his heels.

"Our delicacies," said Harley to himself, "are fantastic; they are not in nature! that beggar walks over the sharpest of these stones bare-footed,—whilst I have lost the most delightful dream in the world, from the smallest of them happening to get into my shoe." The beggar had by this time come up, and, pulling off a piece of a hat, asked charity of Harley; the dog too began to beg: it was impossible to resist both; and, in truth, the want of shoes and stockings had made both unnecessary, for Harley had already destined sixpence for him. The beggar, on receiving it, poured forth blessings without number; and, with a sort of smile on his countenance asked Harley "if he wanted to have his fortune told."

Harley turned his eye briskly on the beggar; it was an unpromising look for the subject of prediction, and silenced the prophet immediately. "I would much rather learn," said Harley, "what it is in your power to tell me. Your trade must be an entertaining one; sit down on this stone, and let me know something of your profession: I have often thought of turning fortune-teller for a week or two myself."

"Master," replied the beggar, "I like your frankness

much. I had the humour of plain-dealing in me when I was a labourer; but there is no doing with it in this world; we must live as we can; and lying is, as you call it, my profession. I was in some sort a wag, and your wags, I take it, are seldom rich, Mr. Harley." "So," said Harley, "you seem to know me." "Ay, there are few folks in the country that I don't know something of. How could I tell fortunes else?" "True; but go on with your story. You were a labourer, you say, and a wag: your industry, I suppose, you left with your old trade, but humour now serves your purpose."

"What signifies sadness, sir; a man grows lean on't. But I was brought to my adleness by degrees. First I could not work; and it went against my stomach to work ever after. I was seized with a jail fever at the time of the assizes being in the county where I lived; for I was always curious to get acquainted with the felons, because they are commonly fellows of much mirth and little thought, qualities I ever had an esteem for. In the height of this fever, Mr. Harley, the house where I lay took fire, and burnt to the ground. I was carried out in that condition, and lay all the rest of my illness in a barn. I got the better of my disease, however, but I was so weak that I spit blood whenever I attempted to work. I had no relation living that I knew of, and I never kept a friend above a week when I was able to joke. I seldom remained above six months in a parish, so that I might have died before I had found a settlement in any. Thus I was forced to beg my bread, and a sorry trade I have found it, Mr. Harley. I told all my misfortunes truly, but they were seldom believed; and the few who gave me a halfpenny as they passed, did it with a shake of the head, and an injunction not to trouble them with a long story. In short, I found that people don't care to give alms without some security for their money: a wooden leg, or a withered arm, is a sort of draft upon Heaven for those who choose to have their money placed to account there; so I changed my

plan, and instead of telling my own misfortunes, began to prophesy happiness to others. This I found by much the better way. Folks will always listen when the tale is their own; and of many who say they do not believe in fortune-telling, I have known few on whom it had not a very sensible effect. I pick up the names of their acquaintances; friendships and little squabbles are easily gleaned among servants and neighbours; and indeed, people themselves are the best newsmongers in the world for our purpose. They dare not puzzle us, for their own sakes, for every one is anxious to hear what they wish to believe; and they who repeat it to laugh at it when they have done, are generally more serious than their hearers are apt to imagine. With a tolerably good memory, and some share of cunning; with the help of walking at night over heaths and churchyards; then by showing the tricks of my dog, I make shift to pick up a livelihood. My trade indeed is none of the honestest; yet people are not much cheated who give a few halfpence for a prospect of happiness, which, I have heard some persons say, is all that a man can arrive at in this world. But I must bid you good-day, sir, for I have three miles to walk before noon, to inform some boarding-school young ladies whether their husbands are to be peers of the realm or captains in the army; a question which I promised to answer by that time."

Harley had taken a shilling from his pocket, but Virtue bade him consider on whom he was going to bestow it. Virtue held back his arm; but a milder form, a younger sister of Virtue's, not so severe as Virtue, nor so serious as Pity, smiled upon him. His fingers lost their compression; nor did Virtue offer to catch the money as it fell. It had no sooner reached the ground than the watchful cur snapped it up; and, contrary to the most approved method of stewardship, delivered it immediately into the hands of his master.

Mackenzie.

**THE LEGEND OF KING SOLOMON AND THE
HOOPES.**

In the days of old, men are fabled to have possessed the power of exercising, by means of a magic seal, a complete sway over the birds of the air and the beasts of the field. When King Solomon wanted to travel, he made use of a carpet of a square form. This carpet had the property of extending itself to a sufficient size to carry a whole army, with the tents and baggage; but at other times it could be reduced so as to be only large enough for the support of the royal throne, and of those ministers whose duty it was to attend upon the person of the sovereign. Four genii of the air then took the four corners of the carpet, and carried it with its contents wherever King Solomon desired.

Once the king was on a journey in the air, being carried upon his throne of ivory over the face of the earth. The rays of the sun poured down upon his head, and he had nothing to protect him from the heat. The fiery beams were beginning to scorch his neck and shoulders, when he saw a flock of vultures flying past. "O vultures!" cried King Solomon, "come and fly between me and the sun, and make a shadow with your wings to protect me, for his rays are scorching my neck and face." But the vultures answered, and said, "We are flying to the north, and your face is turned towards the south. We desire to continue on our way; and be it known unto thee, O king! that we will not turn back in our flight; neither will we fly above your throne to protect you from the sun, although his rays may be scorching your neck and face." Then King Solomon lifted up his voice, and said, "Cursed be ye, O vultures!—and because you will not obey the commands of your lord, who rules over the whole world, the feathers of your neck shall fall off; and the heat of the sun, and the cold of the winter, and the keenness of the wind, and the beating of the rain shall

fall upon your rebellious necks, which shall not be protected with feathers, like the neck of other birds. And whereas you have hitherto fared delicately, henceforward ye shall eat carrion and feed upon offal; and your race shall be impure till the end of the world." And it was done unto the vultures as King Solomon had said.

Now it fell out that there was a flock of hoopoes flying past, and the king cried out to them, and said, "O hoopoe! come and fly between me and the sun, that I may be protected from his rays by the shadow of your wings." Whereupon the king of the hoopoes answered, and said, "O king! we are but little fowls, and we are not able to afford much shade; but we will gather our race together, and by our numbers we will make up for our small size." So the hoopoes gathered together, and flying in a cloud over the throne of the king, they sheltered him from the rays of the sun. When the journey was over, and King Solomon sat upon his golden throne in his palace of ivory, whereof the doors were emerald and the windows diamonds, each larger than the diamond of Jem-shéa, he commanded that the king of hoopoes should stand before his feet.

"Now," said King Solomon, "for the service that thou and thy race have rendered, and the obedience thou hast shown to the king, thy lord and master, what shall be done unto thee, O hoopoe? and what shall be given to the hoopoes of thy race for a memorial and a reward?"

Now the king of the hoopoes was confused with the great honour of standing before the feet of the king, and making his obeisance, and laying his right claw upon his heart, he said, "O king, live for ever! Let a day be given to thy servant, to consider with his queen and his counsellors what it shall be that the king shall give unto us for a reward." And King Solomon said, "Do it so."

So the king of the hoopoes flew away; and he went to his queen, who was a dainty hen, and he told her what had happened, and desired her advice as to what they

should ask of the king for a reward; and he called together his council, and they sat upon a tree, and they each of them desired a different thing. Some wished for a long tail, some wished for blue and green feathers; some wished to be as large as ostriches; some wished for one thing, and some for another, and they debated till the going down of the sun, but they could not agree together. Then the queen took the king of the hoopoes apart and said to him, "My dear lord and husband, listen to my words; and as we have preserved the head of King Solomon, let us ask for crowns of gold on our heads, that we may be superior to all other birds."

And the words of the queen and the princesses, her daughters, prevailed; and the king of the hoopoes presented himself before the throne of Solomon, and desired of him that all hoopoes should wear golden crowns upon their heads. Then Solomon said, "Hast thou considered well what it is that thou desirest?" And the hoopoe said, "I have considered well, and we desire to have golden crowns upon our heads." So Solomon replied, "Crowns of gold shall ye have; but, behold, thou art a foolish bird; and when the evil days shall come upon thee, and thou seest the folly of thy heart, return here to me, and I will give thee help." So the king of the hoopoes left the presence of King Solomon with a golden crown upon his head, and all the hoopoes had golden crowns; and they were exceeding proud and haughty. Moreover, they went down by the lakes and the pools, and walked by the margin of the water, that they might admire themselves, as it were, in a glass. And the queen of the hoopoes gave herself airs, and sat upon a twig; and she refused to speak to the merops, her consins, and the other birds who had been her friends, because they were but vulgar birds, and she wore a crown of gold upon her head.

Now there was a certain fowler who set traps for birds; and he put a piece of a broken mirror into his trap, and a hoopoe that went in to admire itself, was caught. And

the fowler looked at it, and saw the shining crown upon its head; so he wrung off its head, and took the crown to Issachar, the son of Jacob, the worker in metal, and asked him what it was. So Issachar, the son of Jacob, said, "It is a crown of brass," and he gave the fowler a quarter of a shekel for it, and desired him, if he found any more, to bring them to him, and to tell no man thereof. So the fowler caught some more hoopoes, and sold their crowns to Issachar, the son of Jacob; until one day he met another man who was a jeweller, and he showed him several of the hoopoes' crowns. Whereupon the jeweller told him that they were of pure gold, and he gave the fowler a talent of gold for four of them.

Now when the value of these crowns was known, the fame of them got abroad, and in all the land of Israel were heard the twang of bows and the whirling of slings; bird-lime was made in every town; and the price of traps rose in the market, so that the fortunes of the trap-makers increased. Not a hoopoe could show its head but it was slain or taken captive, and the days of the hoopoes were numbered. Then their minds were filled with sorrow and dismay, and before long few were left to bewail their cruel destiny.

At last, flying by stealth through the most unfrequented places, the unhappy king of the hoopoes went to the court of King Solomon, and stood again before the steps of the golden throne, and with tears and groans related the misfortunes which had happened to his race.

So King Solomon looked kindly upon the king of the hoopoes, and said unto him, "Behold, did I not warn thee of thy folly, in desiring to have crowns of gold? Vanity and pride have been thy ruin. But now, that a memorial may remain of the service which thou didst render unto me, your crowns of gold shall be changed into crowns of feathers, that ye may walk unharmed upon the earth." Now, when the fowlers saw that the hoopoes no longer wore crowns of gold upon their heads, they ceased from the persecution of their race; and from that time forth

the family of the hoopoes have flourished and increased and have continued in peace even to the present day.

Cuzon

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PHOEBE PYNCHION.

Phoebe Pyncheon slept, on the night of her arrival, in a chamber that looked down upon the garden of the old house. It fronted towards the east, so that at a very seasonable hour a glow of crimson light came flooding through the window, and bathed the dingy ceiling and paper-hangings in its own hue. There were curtains on Phoebe's bed; a dark, antique canopy with ponderous festoons, of a stuff which had been rich, and even magnificent in its time; but which now brooded over the girl like a cloud, making a night in that one corner, while elsewhere it was beginning to be day. The morning light, however, soon stole into the aperture at the foot of the bed, betwixt those faded curtains. Finding the new guest there,—with a bloom on her cheek, like the morning's own, and a gentle stir of departing slumber in her limbs, as when an early breeze moves the foliage. The dawn kissed her brow. It was the caress which a dewy maiden—such as the dawn is, immortally—gives to her sleeping sister, partly from the impulse of irresistible fondness, and partly as a pretty hint that it is time now to unclose the eyes.

At the touch of those lips of light, Phoebe quietly awoke, and, for a moment, did not recognise where she was, nor how those heavy curtains chanced to be festooned around her. Nothing, indeed, was absolutely plain to her, except that it was now early morning, and that, whatever might happen next, it was proper, first of all, to get up and say her prayers. She was the more inclined to devotion, from the grim aspect of the chamber and its furniture, especially the tall stiff chairs; one of

which stood close by her bedside, and looked as if some old-fashioned personage had been sitting there all night, and had vanished only just in time to escape discovery.

When Phoebe was quite dressed, she peeped out of the window and saw a rose-bush in the garden. Being a very tall one, and of luxurious growth, it had been propped up against the side of the house, and was literally covered with a rare and very beautiful species of white rose. A large portion of them, as the girl afterwards discovered, had blight or mildew at their hearts; but, viewed at a fair distance, the whole rose-bush looked as if it had been brought from Eden that very summer, together with the mould in which it grew. The truth was, nevertheless, that it had been planted by Alice Pyncheon,—she was Phoebe's great-great-grand-aunt,—in soil which, reckoning only its cultivation as a garden-plot, was now unctuous with nearly two hundred years of vegetable decay. Growing as they did, however, out of the old earth, the flowers still sent a fresh and sweet incense up to their Creator; nor could it have been the less pure and acceptable because Phoebe's young breath mingled with it, as the fragrance floated past the window. Hastening down the creaking and carpetless staircase, she found her way into the garden, gathered some of the most perfect of the roses, and brought them to her chamber.

Little Phoebe was one of those persons who possess, as their exclusive patrimony, the gift of practical arrangement. It is a kind of natural magic that enables these favoured ones to bring out the hidden capabilities of things around them; and particularly to give a look of comfort and habitableness to any place, which, for however brief a period, may happen to be their home. A wild hut of underbush, tossed together by wayfarers through the primitive forest, would acquire the home aspect by one night's lodging of such a woman, and would retain it long after her quiet figure had disappeared into the surrounding shade. No less a portion of such homely

witchcraft was requisite to reclaim, as it were, Phoebe's waste, cheerless, and dusky chamber, which had been untenanted so long—except by spiders, and mice, and rats, and ghosts—that it was all overgrown with the desolation which watches to obliterate every trace of man's happier hours. What was precisely Phoebe's process, we find it impossible to say. She appeared to have no preliminary design, but gave a touch here and another there; brought some articles of furniture to light, and dragged others into the shadow; looped up or let down a window-curtain; and, in the course of half an hour, had fully succeeded in throwing a kindly and hospitable smile over the apartment. No longer ago than the night before, it had resembled nothing so much as an old maid's heart; for there was neither sunshine nor household fire in one nor the other, and, save for ghosts and ghostly reminiscences, not a guest, for many years gone by, had entered the heart or the chamber

Hawthorne.

THE NOBLE NATURE.

It is not growing like a tree
In bulk, doth make man better be;
Or standing long an oak three hundred year.
To fall a log at last, dry, bald, and sere,
A hly of a day is fairer far in May,
Although it fall and die that night—
It was the plant and flower of Light.
In small proportions we just beauty see;
And in short measures life may perfect be

B. Jonson.



THE BARBER OF BAGDAD.

In the reign of the Caliph Haroun al Raschid, of happy memory, lived in the city of Bagdad a celebrated barber, of the name of Ali Sakal. He was so famous for a steady hand, and dexterity in his profession, that he could shave a head, and trim a beard and whiskers, with his eyes blindfolded, without once drawing blood. There was not a man of any fashion at Bagdad who did not employ him; and such a run of business had he, that at length he became proud and insolent, and would scarcely ever touch a head whose master was not at least a *Beq* or an *Agâ*. Wood for fuel was always scarce and dear at Bagdad; and, as his shop consumed a great deal, the wood-cutters brought their loads to him in preference, almost sure of meeting with a ready sale.

One day, a poor wood-cutter, new in his profession, and ignorant of the character of Ali Sakal, went to his shop, and offered him for sale a load of wood, which he had just brought on his ass from a considerable distance in the country. Ali immediately offered him a price, making use of these words, "*For all the wood that was upon the ass.*" The wood-cutter agreed, unloaded his beast, and asked for the money. "You have not given me all the wood yet," said the barber, "I must have the pack-saddle" (which is chiefly made of wood) "into the bargain: that was our agreement." "How!" said the other, in great amazement; "who ever heard of such a bargain? It is impossible." In short, after many words and much altercation, the overbearing barber seized the pack-saddle, wood and all, and sent away the poor peasant in great distress.

He immediately ran to the *cadi*: the *cadi* was one of the barber's customers, and refused to hear the case. The wood-cutter went to a higher judge; he also patronized Ali Sakal, and made light of the complaint. The poor man then appealed to the *mufti* himself; who, having pondered over the question, at length settled that it was

too difficult a case for him to decide, no provision being made for it in the Koran; and therefore he must put up with his loss. The wood-cutter was not disheartened; but forthwith got a scribe to write a petition to the caliph himself, which he duly presented on Friday, the day when he went in state to the mosque. The caliph's punctuality in reading petitions is well known, and it was not long before the wood-cutter was called.

When he had approached the caliph's presence, he kneeled and kissed the ground; and then placing his arms straight before him, his hands covered with the sleeves of his cloak, and his feet close together, he awaited the decision of his case. "Friend," said the caliph, "the barber has words on his side—you have equity on yours. The law must be defined by words, and agreements must be made by words: the former must have its course, or it is nothing; and agreements must be kept, or there would be no faith between man and man; therefore the barber must keep all his wood; but——" Then calling the wood-cutter close to him, the caliph whispered something in his ear, which none but he could hear, and then sent him away quite satisfied.

Here, then, I made a pause in my narrative, and said (whilst I extended a small tin cup which I held in my hand), "Now, my noble audience, if you will give me something, I will tell you what the caliph said to the wood-cutter." I had excited great curiosity, and there was scarcely one of my hearers who did not give me a piece of money.

"Well, then," said I, "the caliph whispered to the wood-cutter what he was to do, in order to get satisfaction from the barber, and what that was I will now relate. The wood-cutter having made his obeisances, returned to his ass, which was tied without, took it by the halter, and proceeded to his home. A few days after, he applied to the barber, as if nothing had happened between them, requesting that he, and a companion of his from the country, might enjoy the dexterity of his

hand; and the price at which both operations were to be performed was settled. When the wood-cutter's crown had been properly shorn, Sakal asked where his comrade was. "He is standing just without here," said the other, "and he shall come in presently." Accordingly he went out, and returned, leading his ass after him by the halter. "This is my companion," said he, "and you must shave him." "Shave him!" exclaimed the barber, in the greatest surprise; "it is enough that I have consented to demean myself by touching you, and do you insult me by asking me to do as much to your ass? Away with you, or I'll send you both to *Jehanum*," and forthwith drove them out of his shop.

The wood-cutter immediately went to the caliph, was admitted to his presence, and related his case. "'Tis well," said the commander of the faithful: "bring Ali Sakal and his razors to me this instant," he exclaimed to one of his officers; and in the course of ten minutes the barber stood before him. "Why do you refuse to shave this man's companion?" said the caliph to the barber; "was not that your agreement?" Ali, kissing the ground, answered, "'Tis true, O caliph, that such was our agreement; but whoever made a companion of an ass before? Or who ever before thought of treating it like a true believer?" "You may say right," said the caliph; "but at the same time, who ever thought of insisting upon a pack-saddle being included in a load of wood? No, no, it is the wood-cutter's turn now. To the ass immediately, or you know the consequences." The barber was then obliged to prepare a great quantity of soap, to lather the beast from head to foot, and to shave him in the presence of the caliph and of the whole court, whilst he was jeered and mocked by the taunts and laughing of all the bystanders. The poor wood-cutter was then dismissed with an appropriate present of money, and all Bagdad resounded with the story, and celebrated the justice of the commander of the faithful.—*Florian*.

APPENDIX.

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SKETCH OF INDIAN HISTORY.

APPENDIX.

A SKETCH OF INDIAN HISTORY.

LESSON I.

THE RISE AND FALL OF THE MOGUL EMPIRE.

The early history of Hindustan is involved in much obscurity, the only event which can be determined with anything like certainty being the invasion of India by Alexander the Great, B.C. 330. From this time, until the incursion of the Mahometans in the 7th century, we have scarcely any authentic record in regard to the history of the country. During the period between the 7th and 14th centuries the followers of Mahomet gradually spread themselves over India, till almost the whole country became subject to their sway.

Mahmoud, the chief of a small Mahometan state which had been established at Guzm in the north east of Affghanistan towards the end of the 9th century, was the first to effect a permanent establishment of the Mahometan power in India. He made several expeditions into Hindustan during the years 1000-1025 A.D., defeated with great slaughter the combined forces of all the principal native sovereigns of North-Western India, captured Peshawar, Lahore, Delhi, and other important cities; destroyed many Hindu temples, and carried off immense treasures to his capital at Guzm. In his last and greatest expedition, in 1024, he effected the conquest of Guzerat. He died A.D. 1030, at the age of 63.

The successors of Mahmoud, though retaining their sovereignty over the Indian conquests of the founder, of their dynasty, were

deprived of their possessions westward of the *Suliman Mountains* by the Turks, who at this time poured forth in a tide of conquest from the regions of Central Asia, and established an empire, which eclipsed all the other Asiatic kingdoms of the time in power and extent.

The dynasty of Mahmoud continued altogether for nearly two centuries, when it was supplanted by that of Ghori, which rose and fell with the person of Mohammed Ghori, or Ghoor, who obtained the government of Guzni, in 1174, and reigned for 32 years over a sovereignty equal in extent to that of Mahmoud. Upon his assassination in 1206, his lieutenants, Ildeez and Cuttub, established themselves as independent sovereigns: the former ruling over the mountainous territory to the west of the *Suliman Mountains*; the latter becoming the founder of what is known as the Patan or Affgan dynasty in India.

Under this dynasty the Mahometan rule in India was extended on every side. Bengal and Behar were made, first tributary, and afterwards subject, provinces; Gwalior, the principal stronghold of Hindu power, was reduced; Malwa conquered and annexed; and the whole of the Deccan and the Carnatic brought under the Mahometan yoke.

The rule of the Patan dynasty was, however, much disturbed from time to time by Tatar or Mongol invasions. Towards the close of the 14th century, a great incursion of Mongols (called by Indian historians, Moguls) took place, under the great conqueror Timur, or Tamerlane, who, in 1397, advanced upon and captured Delhi, and proclaimed himself Emperor of India. His rule over the country was but a nominal one, and it was left to his great-grandson, Baber, to establish the Tatar (or Mogul) Empire in Hindustan.

After making several expeditions into India, Baber succeeded in completely overthrowing the existing Mahometan dynasty, and, in 1526, he seated himself upon the throne of Delhi, the first of those sovereigns called Moguls. Baber died in 1530, his reign having been much disturbed by insurrections both in Cabul and India.

LESSON II.

THE MOGUL EMPIRE (*continued*).

In 1555 Akbar, the grandson of Baber, began his long and glorious reign of fifty-one years over India, during which period he proved himself perhaps the greatest and wisest of all the monarchs who ever swayed the sceptre of Hindustan.

During the reign of Akbar, the first European Christian mission, consisting of certain missionaries from the Portuguese settlement at Goa, was received at the Mogul court. This was in the year 1583. Other missions were also received by Akbar from Goa in 1591 and 1595; but, though honourably treated, they do not appear to have produced any great effect upon the mind of the emperor. Akbar died in 1605.

In the reign of his successor, Selim, who assumed the title Jehanghire, or "Conqueror of the World," two English embassies arrived at the court of the Mogul, one in 1608, and the other in 1615, sent out by the East India Company with the view of opening up commercial relations with the dominions of the Mogul.

Jehanghir died in November, 1627, after bequeathing his crown to his son Shauhar. Shah Jehan, his other son, was, however, raised to the throne, in the possession of which he secured himself by the murder, not only of his brother, but of all his nephews. The sceptre which was obtained by the committal of so much crime, was nevertheless wielded by Shah Jehan with much firmness and justice. He led armies into the Deccan, and reduced the princes of that region to a more abject condition of vassalage than before; he also sent expeditions against Candahar in the north-west, and annexed to the empire the rude province of Assam.

To Shah Jehan India is likewise indebted for many of the most splendid of the magnificent monuments of architecture with which its cities are adorned. Among these may be mentioned his palace of red granite at Shahjehanpur; the mosque, called the Jumna Musjid, of the same city, and the celebrated Taj Mehal of Agra, generally esteemed as the finest edifice in the empire. Shah Jehan was deposed by his son Aurangzebe in 1658. He survived for eight years the loss of empire; being kept in strict confine-

ment indeed during that period, but being treated, at the same time, with honour and respect.

The power of the Mogul Empire reached its height of greatness and prosperity during the reign of the usurping Aurungzebe, who, after dethroning his father, and subduing the forces of his brothers, occupied for many years the throne of the Mogul dominions, which under him included the whole peninsula of Hindustan, with the neighbouring regions of Cabul and Assam, and which, in population and wealth, exceeded those of the Roman empire during its most flourishing period.

Aurungzebe was the first of the Mogul princes who adopted the faith of Mahomet in all its rigour,—the other princes of the House of Akbar having made scarcely any profession of the Mahometan religion, although their soldiers and chiefs were most zealous Moslems. This will account for the tolerance manifested by the earlier Mogul sovereigns towards the religion of the subject Hindus, as well as the hatred of the Mahometan rule, which the bigotry and intolerance of the Emperor Aurungzebe subsequently occasioned.

The later years of Aurungzebe, though not marked by any serious reverses, were yet greatly embittered by the failure of several important enterprises, and more especially by the disposition which his sons manifested to imitate the unnatural conduct of their father at the outset of his career.

LESSON III.

THE MOGUL EMPIRE (*continued*).

The reign of Aurungzebe was marked by the rise of the Maharrattas, a native Hindu race, who, inhabiting a mountainous district in Western India, traversed by the *Ghats* and the *Pindya Mountains*, had never been reduced to complete subjection to the Mogul emperor. Under their chief, Sevaji, they made repeated descents upon the plains, and coasts of India, ravaging the country, and returning with their booty to their mountain fastnesses. Sevaji died in 1680, and was succeeded by his son Sambaji, who struggled for a time against the Mogul forces, but was at

length captured and put to death by the command of Aurungzebe.

The Mahratta power, though checked for a time, was by no means extinguished. Aurungzebe died in February, 1707, and his successor, Shah Alum, was obliged to concede to the Mahrattas extensive privileges, in order to deliver several of the finest provinces of his empire from their depredations.

It was during this period, also, of Indian history that the religious sect of the Sikhs rose into importance. The sect had made its first appearance in the reign of Baber. During the reigns of Akbar and his immediate successors they suffered no molestation; and, conducting themselves as peaceable citizens of the empire, their numbers rapidly increased. The persecuting intolerance of Aurungzebe, however, soon converted them into mortal enemies of the Mogul dynasty. While Aurungzebe reigned, they were held in subjection; but upon his death, they were encouraged to leave their places of refuge among the lower *Himalaya*, and again to approach the northern provinces of the Mogul territory. They were unable to cope successfully with the forces of the emperor; but, though checked, their power remained unbroken, and they were destined, at a later period, to play an important part in the history of India.

All these circumstances combined to bring about a rapid dissolution of the Mogul Empire, which, after the death of Aurungzebe, fell into decay. Shah Alum died in 1712, at Lahore, after a short reign of only five years; and immediately upon his death, his dominions became a prey to intestine commotion. The Affgans overran and conquered the provinces of Multan and Lahore; the Sikhs were augmented in numbers and strength; the Jats and Rohillas continued their predatory inroads; and the Mahrattas extended their incursions, even crossing the *Junna*, and establishing themselves in Rohileund; so that by the year 1760, the once mighty Mogul Empire had sunk to so low an ebb, that the title of Great Mogul was little more than an empty sound.

It was during this period of anarchy that the East India Company took those first steps which have resulted in the establishment of the English supremacy in Hindustan, and the foundation of an empire, under the rule of Queen Victoria, mightier than that upon whose ruins it has arisen.

LESSON IV.

EARLY EUROPEAN SETTLEMENTS IN INDIA.

Previous to the discovery, by Vasco di Gama, in 1498, of the passage to India round the Cape of Good Hope, most of the European trade with the East had been conducted by the Venetians by way of Egypt and the Red Sea. Numerous expeditions were sent out by the Portuguese under able, if not very scrupulous, commanders, and in a very short time the supremacy of this nation was established throughout all the Eastern seas.

The greatest of these naval commanders was perhaps Alphonso d'Albuquerque, and upon his death, in 1515, the Portuguese empire in the East had reached its utmost limits,—their dominion, according to the boast of their own contemporary historians, extending from the Cape of Good Hope to China, and comprehending a coast line 12,000 miles in length. This sovereignty must, however, be regarded as only a nominal one, and could only have been exercised in the immediate neighbourhood of the limited number of factories, established for trading purposes, at distant intervals, along this immense line of coast.

The Portuguese retained their supremacy, together with the exclusive trade between Europe and India, for more than a century, and the history, during this period, is occupied chiefly with the relation of their conflicts with the natives, whom their bigotry and intolerance soon inspired with the bitterest enmity.

Towards the close of the sixteenth century, the Portuguese met with formidable rivals in the Dutch, who, in 1596, and again in 1599, fitted out squadrons, and despatched them round the Cape, to open up trade with the East. So successful were they that, by the year 1600, they had, by their diligence and punctuality, entirely supplanted the Portuguese in the spice trade, and, by the year 1605, they had deprived the latter of almost all their possessions in the Moluccas, Philippines, and other Eastern islands, and established their supremacy in the East.

In the same year they effected a settlement in Ceylon, but it was not till 1656, after a long and bloody struggle, that, with

the surrender of Colombo, the Portuguese were finally driven from that island. Malacca, the capital of the Portuguese possessions in that part of the Eastern seas, had been wrested from them in 1610. But though now the dominant power in the East, the Dutch remained content with their insular conquests, and made little or no attempt upon the continent of India itself.

While the Dutch were thus in conflict with the Portuguese in the eastern part of the Indian empire, the English were as successfully opposed to them in the western provinces. They were supplanted at Surat and other settlements on the western coast of India by their new rivals; they were deprived of Ormuz by the Shah of Persia, assisted by the English; and they were expelled from most of their possessions on the coast of Africa by the Imam of Muscat, so that "they were stripped of their vast dominions almost as rapidly as they had acquired them; and now Goa and Mozambique, in a very decayed condition, form nearly the sole remnant of that proud empire which formerly extended over so great a part of the Eastern world."

Reference has already been made to the presence of the English in India. It only remains now to describe briefly the steps by which the British power in Hindustan has gradually become supreme.

The success of the Portuguese and Dutch was not without its influence upon the adventurous spirits of the time in England. Attempts were made in the reign of Edward VI., and again in that of Queen Elizabeth, to open up a communication with India by some new path, as yet undiscovered by former adventurers, but all of these failed in their object. Sir Francis Drake, in his voyage round the world (1577-80), and Cavendish, who made the same voyage (1586-8), both visited the islands of the Eastern seas, and opened up those commercial relations which have since been developed to so immense an extent.

Another attempt was also made in 1593, by a body of English adventurers, to establish a trade with India, by way of the Mediterranean, Syria, and the Persian Gulf; but though the expedition was creditably conducted, and much useful information regarding the trade and productions of the country was collected, the opposition of the Spaniards and the Portuguese, and the difficult and circuitous nature of the route rendered the project

an impracticable one. An expedition round the Cape, which started from Plymouth in 1591, appears to have been disastrous to all concerned.

LESSON V.

THE EAST INDIA COMPANY.

An association was formed in 1599, and a subscription raised, for fitting out another trading expedition to India,—Queen Elizabeth giving it her sanction, and despatching an embassy to the court of the Great Mogul to obtain the necessary privileges. This association was merged, in the year following, into one on a larger scale, constituting what was termed the “Governor and Company of Merchants trading to the East Indies.” To this body a charter was granted by Elizabeth, which was renewed by her successor James I., in 1609, giving to the company the privilege of exclusive trade with the East Indies.

The first settlement of the English in Hindustan was made at Surat, by permission of the Mogul, in 1613. In 1653 the English settlement at Fort St. George, on the Coromandel Coast, the site of the present city of Madras, was established, and raised into a Presidency; and in 1668 the island of Bombay, which had been ceded by the Portuguese upon the marriage of Charles II. with the Infanta of Portugal, was transferred by the Crown to the East India Company.

A factory had been established previously to this, in 1656, on the river *Hoogly*, and a regular trade opened with Bengal. This settlement was for some time regarded as a dependency of the central government at Madras. It was here that the English first attempted to found a political and military ascendancy; an armed force being sent out in 1686 for the purpose of levying war against the Great Mogul and his Viceroy, the Nawab of Bengal, in order to redress the wrongs sustained by the company at the hands of the native rulers.

The expedition was not successful. The factory at Patna was taken, and the English compelled to evacuate Bengal. The

SKETCH OF INDIAN HISTORY.

violent proceedings also of the Governor of Bombay so exasperated the Mogul, Aurungzebe, that he ordered a general attack upon all the East India Company's factories. Surat, Malipatanam and Vizagapatnam, were reduced, and Bombay severely pressed.

The policy of Aurungzebe and the subsequent submission of the English induced him, however, to restore their privileges and to permit the trade to resume its former channels. Nevertheless, from this time the company may be regarded as having commenced openly to aim at territorial possession and independent sovereignty in India. Their actual possessions were limited to the districts in the immediate neighbourhood of the settlements of Bombay and Madras, but in 1698 the company acquired by purchase, from the Viceroy of Bengal, the zemindarship of the town and district of Calcutta, which became, in 1707, the seat of a Presidency, and eventually the capital of the British possessions in India.

An additional grant of land in the vicinity of Madras was obtained from the Mogul Emperors in 1713, together with the privilege of free trade throughout the province of Bengal. The mission was also granted in the purchase of townships in the neighbourhood of Calcutta, but through the hostility of the Nawab the contract was not completed.

From this period the English trade continued gradually increasing, and a feeling of superiority began until the outbreak, in 1756, of the war between England and France, which was waged in India with even greater violence than in Europe itself, and which resulted in the complete supremacy of the English in the East.

Before concluding this portion of the history of India, it should be mentioned that a fresh charter had been granted to the East India Company by Charles II., in 1661, and that during his reign, as that of his brother James II., every encouragement was given to the company, the Crown.

In 1698 a charter was granted to a new East India Company, which, in 1702, after much wangling, was, by Act of Parliament, merged into the old company. Regulations for the government of the company were at the same time framed, which continued in force till the dissolution of the corporation in 1858.

LESSON VI.

**THE STRUGGLE FOR SUPREMACY IN INDIA
BETWEEN THE ENGLISH AND FRENCH.**

Before proceeding to the relation of the events immediately connected with the advancement of the British cause in India, it is necessary to refer briefly to the position which the French had by this time attained in the East.

A company was formed at Rouen, in 1642, for the purpose of trading with the East, but chiefly with the view of effecting a settlement in the island of Madagascar. This enterprise proved unsuccessful, and it was not till 1664 that the French East India Company received its charter from Louis XIV, and endeavoured to found a French empire in India. The company were, however, by no means fortunate in the management of their affairs; they failed in their attempts upon Trincomalee, in Ceylon, and St Thomas, on the Coromandel Coast, but they succeeded at length in establishing themselves at Pondicherry, where the French gained the attachment of the natives, and were enabled to open up a lucrative trade. This station, and the smaller factories of Mahé (Arical), and Chandernagore, were the only possessions of the French in India at the time of the outbreak of hostilities with England in 1744.

For some time it was hoped that the war between the two nations would not extend itself to their Indian settlements, but the jealousy which already existed there between the English and French rendered a collision inevitable, and a struggle commenced in the Carnatic, which, under one pretext or another, was continued for many years. Madras, which was then the capital of the English possessions in India, capitulated to the French forces in 1746, but was restored again to the English upon the conclusion of the treaty of Aix la Chapelle in 1748.

Hostilities did not, however, cease in India. Dupleix the French Governor of Pondicherry, had resolved upon the exclusion of the English from the Coromandel Coast, and the establishment of French ascendancy in Southern India. With this view he began to take an active interest in the dissensions which naturally

arose between the native princes of the Deccan and Carnatic upon the disruption of the Mogul Empire.

To describe all the intrigues of this period of Indian history would exceed the object of this sketch. It will be sufficient for our purpose to know that a struggle was going on at this time for the possession of the offices of Subahdar of the Deccan, and Nawab of the Carnatic,—both originally subordinate appointments under the Mogul emperor, but which had now become virtually independent sovereignties.

With the aid afforded by Dupleix, the rightful, or at least actual, possessors of these territories were dethroned and their rivals set up in their stead; and by the revolution thus brought about, the influence of the French was completely established in Southern India.

The English appear for a time to have regarded the aggrandizement of the French with indifference; but they were at length roused to a sense of the danger to their own interests which they incurred by allowing the ascendancy of the French to continue undisturbed. Adopting the policy of the French, they, too, began to interfere in native politics, and the contest with their ancient foe was soon renewed.

With the events of this stirring period the name of Clive is most intimately associated. At the outbreak of the war he was only a writer in the service of the Company at Madras, but, "abandoning his pen for the sword, he carved out for himself therewith the first and foremost name in that great muster-roll of British soldiers and statesmen who have thrown such lustre on the English occupation of India, and laid the foundation of his country's supremacy in the East." His memorable defence of Arcot, in 1752, and his subsequent victories over the French, entirely destroyed the influence which that nation had acquired in India.

LESSON VII.

PROGRESS OF THE BRITISH POWER IN INDIA.

Upon the breaking out of war between France and Britain, in 1756 (The Seven Year's War), an attempt was made by the French to recover their lost position in India. An expedition sailed from Brest, in May, 1757, which did not, however, reach Pondicherry till April of the following year. Fort St. David was captured and demolished, and Madras was besieged. The latter, after a gallant defence, was relieved by a squadron from England, upon which the English took the field, reconquered their possessions in the Carnatic, reduced Carical, and other French strongholds, and laid siege to Pondicherry, which fell into their hands in January, 1761.

Important events were in the meantime occurring in Bengal. Calcutta had fallen into the hands of the Nawab Suraja Dowla, and the horrors of the "Black Hole" had been perpetrated, in 1756. The city was soon afterwards recovered by Colonel Clive, at the head of an armed force, fitted out at Madras, and despatched to avenge the deaths of their countrymen.

The Nawab being defeated in a second attempt upon Calcutta, came to terms with the English, and retired with his forces into the interior. The truce proved of short duration. News arrived in Bengal of war having been declared between England and France. Hostilities between the respective settlements of the two nations commenced, and the French factory at Chandernagore soon fell into the hands of the English.

This capture was followed by the defeat and total overthrow of Suraja Dowla at the battle of Plassy (June 23rd, 1757), an event which placed the whole of Bengal in the hands of Clive, and established the British rule in that part of India. Meer Jaffir, the vizier of Suraja Dowla, was placed on the throne of his master, but the real sovereignty over the provinces of Bengal, Behar, and Orissa remained with Clive. The Circars were shortly afterwards reduced to nominal submission to the English.

Clive resigned the government in 1760, and proceeded to Eng

land, where he was rewarded for his services with an Irish peerage, as Lord Clive and Baron Plassey, and obtained a seat in Parliament.

After Clive's departure the greatest disorder prevailed in India: the native princes could no longer be kept in subjection; the servants of the Company began to amass wealth by bribery and extortion; while the affairs of the Company itself were reduced to the verge of bankruptcy.

This state of affairs lasted till 1765, when Lord Clive was despatched, with full powers, as governor and commander-in-chief in Bengal, to reform the mal-administration into which the country had fallen. He landed at Calcutta in May, and in a very short time succeeded in purging the Indian government of oppression, extortion, and corruption. Having placed the jurisdiction of the Company upon a satisfactory footing, and procured from the Emperor Shah Alun a deed conferring on them the sole administration of the provinces of Bengal, Orissa, and Behar, he returned finally to England in the early part of 1767.

From this time the history of India is little more than a record of that series of conquests and annexations which have given to the English the possession of more than three-fourths of the whole country, and the virtual sovereignty over all the rest. In the succeeding lessons a brief chronological outline of these events will be given.

LESSON VIII.

PROGRESS OF THE BRITISH POWER IN INDIA (*continued*).

After the final departure of Lord Clive, affairs again went wrong in India. Hyder Ali, the founder of the kingdom of Mysore, allied himself with the Mahratta chieftains, threatened Madras itself, and succeeded in extorting an advantageous peace from the English; while a famine in Bengal, in 1770, is said to have carried off one third of the inhabitants.

These disasters, and the attendant misrule in India, attracted

the attention of the English government, and occasioned the appointment, in 1772, of a committee of inquiry into the state of the Company's affairs. In the year following (1773) the celebrated Regulating Act was passed, by which very important reforms were made in the constitution of the Company, both with regard to the Court of Directors in England, and the administration in India. By this Act the Governor of Bengal was invested with authority over all the other presidencies, with the title of Governor-General of India.

Warren Hastings, who had been appointed Governor of Bengal in 1772, was the first to inherit the new dignity. This able administrator held the reins of government from 1773 till 1785, during which period, although his measures for replenishing the Company's treasury were not always of the most scrupulous nature, and though he was greatly impeded and embarrassed by his Council, he yet succeeded in averting the dangers which threatened at one time to annihilate the British supremacy in India. By his exertions the powerful confederacy of the Mahometan sovereigns of Mysore and the Deccan with the Mahratta chieftains, assisted by the French, was completely broken up,—Hyder Ali being totally defeated by the English, under Sir Eyre Coote, at Porto Novo (July 1, 1781), and again at Pollilore (Aug. 1781), and Arnee, in 1782.

Upon the death of Hyder Ali, in December, 1782, the struggle in Southern India was continued with his son and successor Tippu, with whom Hastings concluded a peace in the autumn of 1783.

Benares and the surrounding district had been annexed in 1775, having been ceded by the Vizier of Oude, in return for services rendered by Hastings to his father, Suja Dowla, in his war with the Rohillas. In the same year also the island of Salsette, near Bombay, had been taken from the Mahrattas.

In 1784 Mr. Pitt created the Board of Control to serve as a check upon the East India Company. Towards the close of this year, Warren Hastings announced his intention of retiring, and when he left for England, in the spring of 1785, peace prevailed throughout India.

Lord Cornwallis was appointed to the Governor-Generalship, in February, 1786; affairs in India having been administered in the interval by the senior member of the Council. His chief measures

were the reform of the judicial system and the settlement of the land-revenue throughout Bengal, upon what is known as the Zemindary System of land-tenure.

In 1790 an alliance was made with the Mahrattas, the Nizam, and the Raja of Coorg, for the purpose of making war upon Tippu Sultan, who had invaded Travancore, a province under British protection. On this occasion Tippu was compelled to purchase peace by the cession of half his kingdom. The districts of Malabar, Dindigul, and Salem, thus fell into the hands of the British (1792). The island of Penang was obtained by purchase, in 1786, from the Raja of the adjoining territory of Queda.

Lord Cornwallis was succeeded in the government of India by Sir John Shore (1793-1798). There is, however, little of any importance to be related of this period.

LESSON IX.

HISTORY OF THE ENGLISH IN INDIA.

Marquis Wellesley (1798-1805).—Under this administration the war was renewed with Tippu Sultan, who had broken faith by intriguing with the French as well as with other native princes. The war terminated in 1798 with the capture of Seringapatam, the death of Tippu, and the partition of his dominions.

The English obtained the sovereignty over Canara and Coimbatore, and the command of all the passes of the *Ghats*; to the Nizam was consigned a large tract of country adjoining his dominions in the Deccan; while the extensive district in the interior of Mysore was erected by the Marquis of Wellesley into a native kingdom under British protection,—the old Hindu dynasty, which had been displaced by Hyder Ali, being restored in the person of a young prince only five years of age; and the administration being most successfully carried on during his minority by Colonel Wellesley (afterwards the celebrated Duke of Wellington), the brother of the Governor-General.

In the same year (1799) the province of Tanjore was ceded to the English by its Raja in consideration of an annual pension; and in 1801 the whole of the Carnatic was annexed on similar terms.

Towards the close of this year also a considerable addition was made to the English territory by the cession of a large district between the *Gogra* and the *Ganges*, including Allahabad, Goruckpur, Jounpur, and Bareilly. This territory was acquired from the Vizier of Oude in commutation of the annual tribute due from him to the Company.

Shortly afterwards the three Mahratta chieftains, viz., the Holkar, Sindia, and the Raja of Berar, encouraged by French intrigues, revolted against their sovereign the Peshwa, who ruled at Poona. The Governor-General despatched two armies against the confederates,—one commanded by his brother, and the other by Lord Lake.

Welllesley invaded Berar, took Ahmednuggur, and totally routed the Raja and Sindia in the great battle of Assaye (September 24, 1803), a victory which "established the fame of the greatest commander of the age," and secured the British dominion in India. The Mahrattas were again defeated at Argaum, and compelled to sue for peace.

Lord Lake was equally successful in Northern India. He stormed and took Allgur, defeated a large force under the French general Perron, and advanced against Delhi, where the cause of the Sindia was being supported by another French commander. After defeating him on the banks of the *Jumna*, Delhi, the capital of Hindustan and the residence of Shah Alum, the last of the Mogul emperors, fell an easy prey to the forces of Lake. Agra was next taken, and the power of the Sindia completely destroyed in that part of India.

By these victories the influence of the French in India was abolished, and a vast accession of territory accrued to the English, including the whole of the Doab, with the cities of Delhi and Agra, the fortresses of Ahmednuggur and Broach with their dependent territories, portions of Guzerat, and other districts. The Cuttack, on the Orissa Coast, was also annexed.

The English possessions in India were thus almost doubled in value and extent during the administration of the Marquis

Wellesley His policy was, however, regarded as too aggressive by the East India Company, and he was therefore recalled in 1805, and superseded by Lord Cornwallis, who died shortly after his arrival in India, and was succeeded by Lord Minto, who administered the government of India from 1806 till 1813, during which time nothing worthy of note occurred.

LESSON X.

HISTORY OF THE ENGLISH IN INDIA

(continued).

Marquis Hastings (1813-1823) — Lord Minto was succeeded in 1813 by the Marquis of Hastings, under whose administration the Mahrattas and their allies, the Pindaris, were reduced to obedience. The incursions of the Gorkhas of Nepal into the British territories of Northern India were also suppressed, and compensation obtained. The province of Kumaon and other districts being annexed in 1816.

At the close of the Pindari war (just alluded to), and the defeat of the Peshwa, a great extent of territory in Western India was formally taken possession of and annexed,—including the Singur Territory, Darwa, Poona, North Concan, Candolli, and Ahmedabad, belonging to the Peshwa, the Nerbudda Territory, ceded by the Raja Berar, and Ajmir, which was surrendered by the Sindia.

Lord Hastings directed his attention to the amelioration of the moral condition of the people of Hindustan as much as to the consolidation of the English power, which, at the close of his brilliant administration in 1823, had become supreme throughout India.

From 1823 to 1835 two Governor Generals ruled over India, viz., Earl Amherst and Lord William Bentinck. The administration of the former was chiefly signalized by the outbreak of the first Burmese war at the close of which, in 1826, Assam, Arakan, and the Tenasserim Provinces were added to the British dominions.

Singapore, which had been taken from the Dutch in 1818, and Malacca, which had formerly been in the possession of the English, were both ceded about this time by a convention with Holland, in exchange for certain possessions in Sumatra.

Lord Auckland (1815-1842) —The name of this Governor General is chiefly associated with the policy which was so discreditable and disastrous to the English government in India, and which terminated in the horrible massacre of the British troops in the *Kyber Pass*. Lord Auckland resigned in 1842, and was succeeded by

Lord Ellenborough (1842-1844), who adopted a more vigorous line of policy. Reliefs were sent under General Pollock to the assistance of General Sale, who, after the almost total destruction of his army, was still holding out at Jelalabad. The city of Cabul was captured and the prestige of the British arms restored in that quarter of the Indian Empire.

The Afghan war was followed by the occupation and annexation of Sind after the battle of Moani, near Hyderabad, in 1843. This campaign was successfully conducted by Sir Charles Napier against a confederation of the Amirs or princes of the district who had been encouraged by the English reverses in Afghanistan to take up arms against the British power.

In the same year (1843) Gwalior was reduced by the English generals Gough and Grey.

LESSON XL

HISTORY OF THE ENGLISH IN INDIA

(continued)

Lord Hardinge (1844-1847) —Lord Ellenborough having been recalled by the directors of the Company, through alarm at his warlike policy, Lord Hardinge was sent out to succeed him as Governor General. At the end of the second year of his administration, the Sikhs of the Punjab—a district which had long been in a disorganized condition—declared war upon the English, crossed the *Sutlej* and advanced upon Ferozepur.

The Sikhs were the most warlike enemies the British had yet encountered in Hindustan, and it was only after a series of most

obstinately contested engagements that the campaign against them was brought to a successful issue. The victories of Aliwal and Soobraon, in 1846, brought the first Sikh war to a conclusion and secured the possession of the territory between the *Sutlej* and *Beas*, known as the *Julundur Doab*.

Lord Dalhousie (1848-1856).—The administration of this nobleman is memorable for the commencement of great public works; the introduction of cheap uniform postage, railways and telegraphs, for improvements in the mode of government, and for great social progress generally.

His government was disturbed at the commencement by a revolt of the Sikhs at Multan, in 1848. This city held out for some time against the English forces, and gave encouragement to other Sikh princes to join in the rebellion. A second Sikh war followed, which was terminated by the crowning victory at Gujrat (Feb. 21, 1849) and the formal annexation of the Punjab.

The second Burmese war, in 1852, added the province of Pegu, at the mouth of the *Irawadi*, to the British possessions in India. The territory known as the Assigned Districts of Hyderabad also passed to the English in 1854 in payment of a debt, incurred by the Nizam Ali for military assistance during his wars with Hyder and Tippu.

The last great acquisition of territory was the annexation of Oude in 1856, owing to the misrule of its native tributary sovereigns and their refusal to accept the direct interference of the British government in the management of affairs.

LESSON XII.

HISTORY OF THE ENGLISH IN INDIA

(continued).

Lord Canning (1856-1862) — When Viscount Canning began his administration, everything gave promise of a reign of peace and prosperity, but this treacherous calm was soon to be followed by a terrible tempest. Early in 1857 symptoms of disaffection began to appear among the native Sepoy regiments of the Bengal army; and in May, many were in open revolt. In the same month, Delhi

the ancient capital of Hindustan, and still the residence of the representative of the Moguls, was seized by the insurgents with all its accumulation of military stores,—there being no European troops at hand for its protection.

The capture of Delhi was followed by a general revolt of all the Bengal regiments; the Bombay and Madras troops, with few exceptions, remained loyal. All Bengal was for a time lost to the English. Cawnpur was taken, and its inhabitants cruelly massacred. Lucknow was invested, but was relieved, first by the gallant Havelock, and finally by Sir Colin Campbell (afterwards Lord Cardigan).

From this time the cause of the rebels declined. Central India was reduced by Generals Rose, Roberts, and Whitlock, the surrender of Gwalior followed, Bareilly in Rohilkund was taken in May; and in June, 1858, no place of any importance remained in the hands of the mutineers. Delhi had been retaken by General Wilson, in September of the previous year.

Much valuable assistance was rendered to the British Government by the native princes who remained loyal. Among these were Sindia, the Maharaja of Gwalior, Holkar, the Nizam, and many others, upon whom rewards and honours were, in consequence, bestowed.

The king of Delhi was tried as a traitor to the British Government, and the last great Mogul and heir of the house of Timur, was sentenced to be transported across the sea as a felon. He was accordingly banished to Tongu, in Pegu, where he died in 1862.

The mutiny of the Bengal army proved the deathblow to the East India Company. A bill was introduced into the English parliament abolishing the Company and transferring the government of India to the Crown; and on September 1st, 1858, by royal proclamation, the great East India Company ceased to exist.

Lord Canning was succeeded in 1862 by the Earl of Elgin, who continued the reforms which had been commenced under the preceding administration.

Upon his death, at the close of 1863, Sir John Lawrence, a man of great ability and of much and long tried experience in Indian affairs, was appointed Viceroy, and administered the government of this great territory with singular prudence and zeal, until his retirement from India in 1868.

The work of reform, so ably commenced by these eminent statesmen, was as rigorously continued by Lord Mayo who succeeded Sir J. Lawrence, but whose career was cut short by his assassination at Port Blair, in the Andaman Islands (Feb 8th, 1872), while on a visit of inspection to that convict settlement.

He was succeeded by Lord Northbrook, whose rule will long be remembered for its absence of display and for its business like character. India was truly in need of the services of so able a financier. His personal energy (fortified by the foresight of his then Lieutenant-Governor, Sir George Campbell) rescued the country from the horrors of famine in 1874.

During the Christmas of 1875, and the earlier months of 1876, His Royal Highness the Prince of Wales made an extensive tour throughout the country, and his visit was as welcome as it may prove, in many ways auspicious.

The following is the text of a letter addressed to Lord Northbrook by the Prince of Wales on his departure from India.

HMS St. George, Bombay, March 13th, 1876

MY DEAR LORD NORTHBROOK,

I feel I have India without expressing to you as the Queen's representative at this visit, my sincere pleasure and the deep interest which I have visited this great and wonderful country. As you are aware, it has been my hope and intention for some years past to see India, with a view to become more intimately acquainted with the Queen's subjects in this distant part of her Empire, and to examine for myself those great interests which have always had so great an attraction for travellers. I may candidly say that my expectations have been more than realised. What I have witnessed, so that I return to my native country more deeply impressed with all I have seen and heard. The information I have gained will I am confident, be of the greatest advantage and will form a useful source of information much that I hope hereafter to acquire. The recollections I have met with from the princes and chiefs and from the native population at large is so gratifying to me, as the evidence of loyalty. This manifestly shows an attachment to the Queen and to the Throne, which, I trust, will be made every year more and more lasting. It is my earnest hope that the many millions of the Queen's Indian subjects may daily become more convinced of the advantages of British rule, and that they may realise more fully that the Sovereign and the Government of England have the interests and well-being of India very sincerely at heart. I have had frequent opportunities of seeing native troops of all branches of the service, and I cannot withhold my opinion that they constitute an army of which we may feel justly proud. The "march past" at Delhi of so many distinguished officers and of such highly disciplined troops was a most impressive sight, and one which I shall not easily forget. I wish also to state my high appreciation of the Civil Service, and I feel assured that the manner in which their arduous duties are performed tends greatly to the prosperity and the contentment of all classes of the community. I cannot conclude without thanking you, and all those in authority, for the facilities which have enabled me to traverse so rapidly so large an extent of country, and rest assured I shall ever retain a grateful memory of the hospitality tendered by yourself and by others who have so kindly received me.

Believe me, my dear Lord Northbrook, yours very sincerely,

ALBERT EDWARD

Lord Northbrook has been succeeded by Lord Lytton. The Queen of England is now formally declared *Empress of India*.

CHRONOLOGICAL ERAS OF INDIAN HISTORY.

The chronology of India is very confused, but subject to many local variations. The following are the principal modes of reckoning —

I The Kali Yugam, or present age of the world. This commenced B.C. 3101, and proceeds in cycles of 66 years, each year having a particular name (see table below). The enumeration of the Kali is now used only by astrologers and learned Hindus. The cycles are still in common use, but the reckoning is not uniform, that of Hindustan being about 130 years in advance of the Deccan.

II Samvat, or Era of Vicramaditya, commencing B.C. 57, in common use in Hindustan.

III Sacam, or Era of Salivahana, commencing A.D. 77, in common use in the Deccan.

IV Kollam (Kam Quilon) or Era of Paruru commencing A.D. 831 confined to the west coast of India. Its cycle is 1000 years.

V The Persian Era of Yesdigard III (Anno Pers.) commencing A.D. 632 used by the courts and public literature of Ghuzni and Delhi and the Persians of the present day. It terminated A.D. 1073 by Sultan Mahmud Malik Shah Seljuki it is now 630 (1) years behind the Christian reckoning. This is a solar year.

VI The Hegira (A.H.) commencing A.D. 622 used by all Mohammedans throughout India. This is purely lunar and lost is fifteen the solar reckoning by about 11 days (on the average) each year.

VII Fasil. An adaptation of the lunar solar year of the Hindus to the Mohammedan reckoning. It was originated for revenue purposes by Akbar in A.H. 992 and in Hindustan is reckoned from the commencement of his reign A.H. 963. It was not introduced into the Deccan till the reign of Shah Jehan and is there reckoned from the commencement of his reign A.H. 1035 consequently there is a difference of two years between the reckoning.

VIII Sen, the Bengali year, and the Vulf or Omit Sen of Orissa, are local variations of Fasil.

NOTE.—The Hindu reckoning by lunar years, which are so arranged as to adjust themselves to the solar reckoning, is about 19 years in advance of the Hindu year, therefore is in fact solar, and equivalent to the Christian year.

TABLE OF NAMES IN THE 60 YEARS CYCLE

1 Prabhava	16 Chitrabhanu	31 Hevilmut	46 Purilavi
2 Vilhava	17 Swabhanu	32 Vilavali	47 Primalcha
3 Scula	18 Jarana	33 Vicari	48 Aninila
4 Icaridita	19 Jarthava	34 Sarvati	49 Raxasa
5 Trayabhatti	20 Vyaya	35 Plava	50 Nila
6 Angaraka	21 Surajit	36 Subhanit	51 Ingala
7 Sunraka	22 Sarvaha	37 Silitrit	52 Kalyaneti
8 Bhava	23 Virithi	38 Krolhi	53 Siddhanti
9 Jyva	24 Vicrui	39 Vivavasi	54 Hanir
10 Dhat	25 Khara	40 Lantava	55 Dirmat
11 Iswara	26 Nandana	41 Pavanaga	56 Dundulhi
12 Bihulanya	27 Vyaya	42 Kilaca	57 Rudroigari
13 Primalhi	28 Jyva	43 Samya	58 Patani
14 Vicrama	29 Manmatha	44 Sudhariva	59 Krolhina
15 Vishu	30 Darmukhi	45 Virodhicit	60 Achsha

(From the "Chart of Indian History" Allen & Co.)

